MEDICAL PROCEEDINGS

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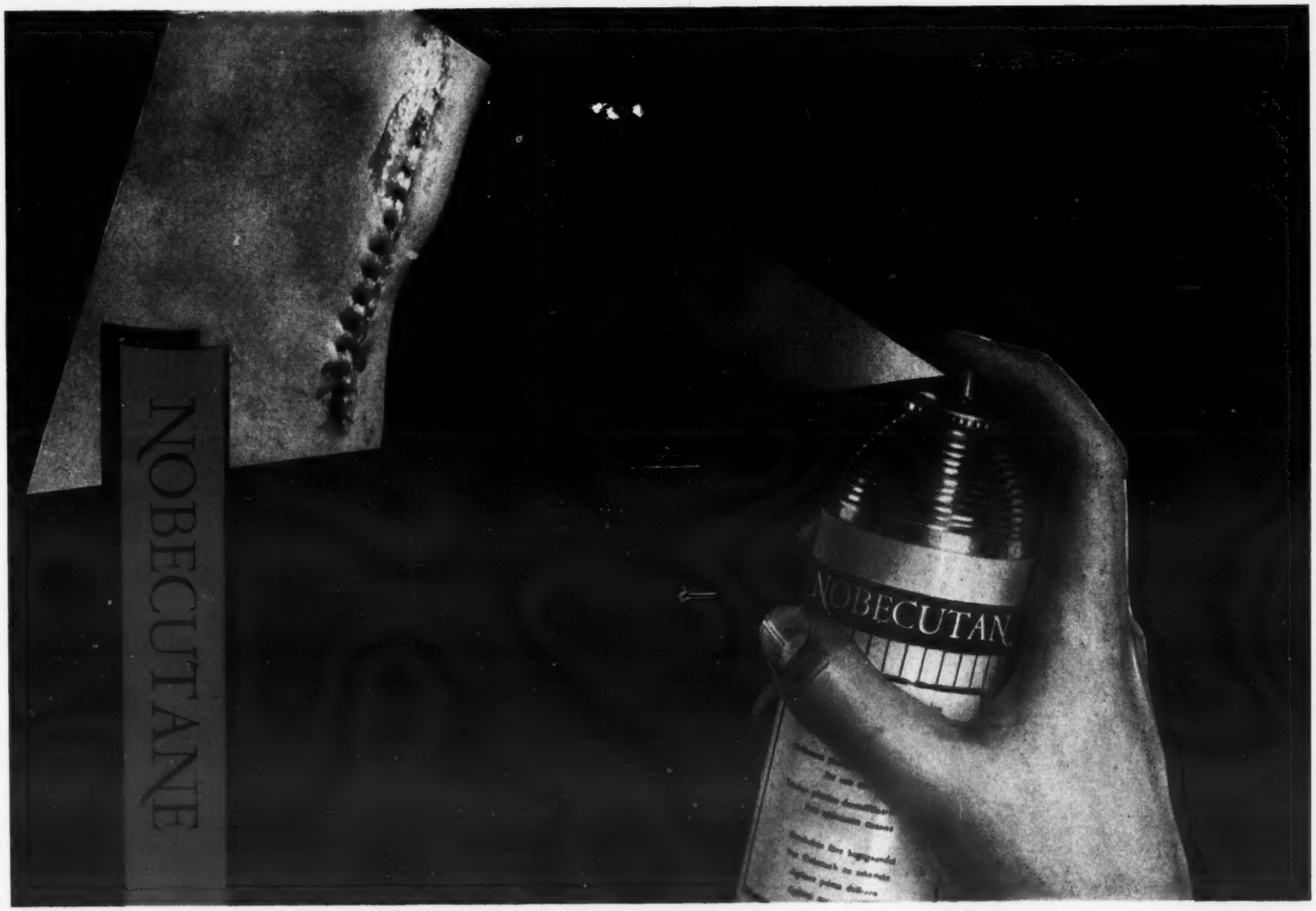
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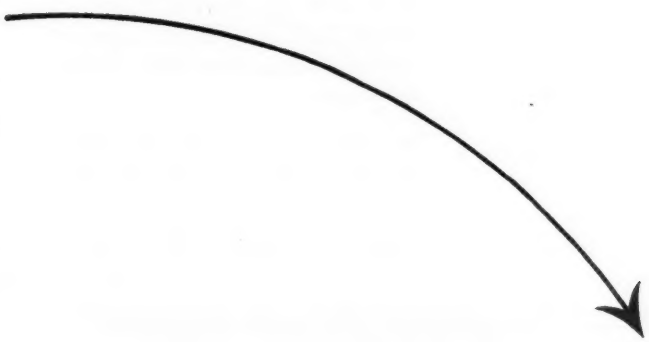

Medical Proceedings · Mediese Bydraes

Vol. 2 · No. 6 INDEX · INHOUD Junie 1956 June

Pfizer

INTERNATIONAL

medical news bulletin

Current Developments in the Fields of Antibiotics, Hormones, Nutrition and Clinical Medicine

Prepared for Physicians by the Medical Department of Pfizer International, Inc., 25 Broad Street, New York 4, N.Y., U.S.A

Vol. III, No. 5, 1956

ANTIBIOTICS NEWS AND NOTES

TERRAMYCIN®* HAS "SIGNIFICANT ADVANTAGES" IN PUERPERAL MASTITIS for the maintenance of the capacity to nurse in a subsequent pregnancy, according to Gross.[1] The total results were "very good" in 78 and "good" in 12 of 19 studied women. Infection was arrested early enough that 52 mothers could nurse their babies. Surgery was not required in 51 patients (56%); the author feels that these patients would have had abscess formation if they had not been treated with Terramycin.

In another study by the same author,[2] patients with puerperal mastitis (91), puerperal fever (22), abortion with fever (32), adnexitis (14), parametritis (4), pelveoperitonitis (20) and intercurrent inflammatory processes (20) were given Terramycin therapeutically. Surgical patients (60) and those treated with radium-roentgen for genital carcinoma (37) were given Terramycin prophylactically. Total results were "very good" in 80% and "good" in 17% of the patients. The author feels that Terramycin treatment brought "prominent success" in treatment of gynecologic diseases.

BROAD-SPECTRUM ANTIBIOTICS IN PRE- AND POSTOPERATIVE CANCER CARE - Moore[3] recommends at the recent Annual Meeting of the American Society of Maxillofacial Surgeons that cancer patients requiring major mouth and neck surgery be given the "broader spectrum drugs such as the various tetracyclines" because of the mixed pathogens found in such wounds. "Intramuscular tetracycline is administered twelve hours before the operation so that adequate blood levels will be present at the time of surgery . . ." Postoperatively, "adequate doses are given intramuscularly every six hours for about one week" to keep the infection under control. "Generally, if proper antibiotics are administered, the only clinical sign of infection is a three- to four-day postoperative edema in the operative region." (Tetracycline available from Pfizer as Tetracyn®).

VIOCIN®† "OFFERS FURTHER THERAPEUTIC POSSIBILITIES" IN LUNG TUBERCULOSIS, concludes Janschulte[4] in a report on nine unoperable patients previously treated with available modern chemotherapeutics. "All patients reported soon after the beginning of treatment a noticeable improvement of their over-all condition, and especially an increased general feeling of functioning." The total dose of the antibiotic ranged between 50 and 62 Gm. Author feels that Viocin "together with streptomycin represents a very effective combination in the treatment of tuberculosis."

*Brand of oxytetracycline.
†Brand of viomycin sulfate.

TERRAMYCIN INTRAMUSCULAR OF VALUE IN EARLY SYPHILIS - "Oxytetracycline intramuscular is definitely of value in the treatment of early syphilis . . . ," suggests Baler,[5] following studies of 16 patients. Twelve showed successful response to the drug. All patients except one received Terramycin 200 mg. b.i.d. for 10 days, with a total dosage of 4 Gm., the last receiving a total of 3.4 Gm. The latter was among the four failures. To increase effectiveness, the author recommends a total dosage up to 6 or 8 Gm.

NEW USES FOR ANTIBIOTICS

ANTIBIOTICS AND LYOPHILIZATION STERILIZE VESSEL GRAFTS - Blood vessels for homografts do not require sterile removal at autopsy, report Fisher and colleagues,[6] as studies have shown that treatment with large doses of antibiotics in combination with lyophilization is adequate for sterilization. "Approximately 80% [of contaminated aortas] will be made sterile with antibiotics alone." In this series, 66 of 67 contaminated vessels were sterilized by the combination of penicillin, streptomycin and chloramphenicol, used in conjunction with lyophilization.

TERRAMYCIN-POLYMYXIN B "IDEAL THERAPY" FOR PSEUDOMONAS INFECTIONS - The enhanced antipseudomonal activity of a Terramycin-polymyxin B combination is recommended by Vacca[7] as "ideal therapy" in Pseudomonas infections. In testing the two antibiotics against ten strains of Pseudomonas aeruginosa, he found the combination was "much more effective in inhibiting growth" of eight strains than was either antibiotic alone.

"TETRACYCLINE" by HARRY F. DOWLING, M.D.

Third in a series of monographs, this attractively bound volume (pps. 64) deals with tetracycline, latest of the broad-spectrum antibiotics. Dowling presents a well-rounded picture of tetracycline, including the chemistry and pharmacology of the drug, the range of its antimicrobial activity, its therapeutic effects in a variety of infectious diseases as well as in experimental animal infections. The author has drawn freely from his own clinical experiences with tetracycline and has also included material from the most pertinent published studies. There is an extensive bibliography.

ANTIBIOTICS AROUND THE WORLD

INDIA: TERRAMYCIN "MOST EFFECTIVE" IN ULERYTHEMA SYCOSIFORME - Since it proved "most effective" in sensitivity tests, Terramycin (total 20 Gm.) was given to a patient with ulerythema sycosiforme of 15 years' duration, reports Steppert.[8] "Already after a week the pustules shrank and the erythema faded visibly." No fresh inflammatory changes were seen.

SPAIN: INTRAMUSCULAR TERRAMYCIN-DIHYDROSTREPTOMYCIN "EXCELLENT" IN CHRONIC BRUCELLOSIS - Terramycin-dihydrostreptomycin combination was "excellent as initial treatment of attack" in 20 patients with afebrile chronic brucellosis, reports Leibovich.[9] "Seventeen obtained visible clinical improvements, and the others very good ones, which permitted them to resume their usual life." Dosage: 400 mg. crystalline Terramycin and 1 Gm. dihydrostreptomycin a day for 20 days, given intramuscularly.

ITALY: "MARKED IMPROVEMENT" WITH TETRACYCLINE IN ACTINOMYCOSIS was observed in a patient after 50 days of treatment. Gonzáles et al.[10] point out that although it was found that the patient did not follow the tetracycline treatment regularly, prior

to this discovery they had already observed "increase in appetite, improvement in the nutritional state, good color of stools and improvement in the general condition." Dosage: 1 Gm. a day (250 mg. q. 6 h.) of oral tetracycline together with iodine therapy, vitamins and calcium gluconate.

GERMANY: TERRAMYCIN IS "DRUG OF CHOICE" IN BALANTIDIASIS, according to the J.A.M.A. in a report on the work of Lumbreras Cruz, of Peru.[11] After second day of therapy, most of the 39 patients with balantidiasis exhibited parasitologic and clinical improvement. Stools were completely free of parasites within five days in all patients. Terramycin therapy was continued for four to nine days, with an average daily dose of 1 Gm.

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6. Fisher, B., et al.: Ann. Surg. 143:73 (Jan.) 1956.
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9. Leibovich, L.: Semana méd. 62:732 (Oct. 27) 1955.
10. Gonzáles, H. D.; Aguilleiro Moreira, J. M., and Moreau, E. J.: Día med. 27:3055 (Dec. 12) 1955.
11. Foreign Letters: J.A.M.A. 160:315 (Jan. 28) 1956.

HORMONES

PREDNISOLONE IN DERMATOLOGY - Systemic prednisolone "is an effective and highly active anti-inflammatory corticosteroid for dermatologic use." Frank and Stritzler[1] treated 67 patients orally with Sterane tablets*; an initial dose of 40 mg. "seemed to be therapeutically effective in almost all patients." Average maintenance dose was 15-20 mg. daily. Conditions treated included atopic dermatitis, contact dermatitis, pemphigus, urticaria, drug eruptions, psoriasis, stasis dermatitis and other dermatoses. Authors underline that "patients can be treated with prednisolone on a non-restricted diet, and hypertension and sodium and fluid retention are not frequent complications."

ENGLAND: PREDNISOLONE SUPERIOR IN RHEUMATOID ARTHRITIS - "Prednisolone . . . is more effective than any previous drug in the control of the signs and symptoms of rheumatoid arthritis," believes Gillhespy.[2] In a trial with 18 severely ill patients, beneficial effect of prednisolone reached its maximum within two days after starting administration of 5 mg. prednisolone q.i.d. There were general improvement in pain, stiffness, and tenderness in joints, reduction in swelling, and increase in the range of movements of joints. The majority of the patients were subsequently satisfactorily maintained on 5 mg. b.i.d. No toxic side effects were observed. In addition prednisolone had "a beneficial action" in a case of severe hemolytic anemia and relieved a patient with giant urticaria which was completely resistant to all other forms of therapy. (The hormone was partially supplied by Pfizer's British subsidiary as Deltacortil.)

PREDNISOLONE EFFECTIVE IN IDIOPATHIC SPRUE - According to Adlersberg,[3] prednisolone orally "appears to be at least as effective as prednisone and perhaps more so" in

*Deltacortil,† Pfizer's brand name for prednisolone, is supplied as white, scored, 5 mg. tablets, bottles of 10, 20 and 100; in the familiar Pfizer oval shape.
†Trademark.

the treatment of refractory sprue. Eight patients were treated with prednisolone; in some instances daily maintenance doses of 5.0-7.5 mg. proved to be adequate. Prednisone was given to 12 patients; it favorably influenced the sense of well-being and the appetite, and helped control diarrhea and steatorrhea.

PREDNISOLONE, PREDNISONE "MAJOR ADVANCE" IN RHEUMATOID ARTHRITIS - In an editorial in Postgraduate Medicine, Fishbein[4] calls the development of the two new synthetic steroid hormones a "major advance in the care of rheumatoid arthritis and other collagen disorders." He also emphasizes their reasonable cost, even for long-continued therapy.

According to Henderson,[5] prednisolone and prednisone have been "singularly effective in relieving pain and swelling in many rheumatoid arthritics who have not responded to the older compounds or who have ceased to benefit from them." Of 721 rheumatoid arthritics treated with prednisone, 97% showed "good or excellent results." Both substances "are superior drugs in the clinical management of rheumatoid arthritis, intractable asthma, and pulmonary emphysema and are to be preferred over the older adrenocortical steriods." "In the normal therapeutic range of 10 to 30 mg. per day, side actions encountered to date have been few in number and generally mild in intensity."

IRELAND: CORTRIL® EFFECTS "CLEARLY BETTER" RESULTS IN DERMATOSES, report Mitchell, Donelan and Meenan.[6] Cortril Topical Ointment,* 1.0% or 2.5%, produced "good" immediate results in 86% of 165 patients with atopic eczema, anogenital pruritus, lichen simplex, otitis externa, nummular eczema, contact dermatitis, stasis eczema and miscellaneous dermatoses. Immediate response to the preparation was considered to be "clearly better than with older methods in most cases." The ointment was "very useful in affording rapid and simple symptomatic relief" in localized lesions with severe pruritus (e.g., eczema nuchae, pruritus ani). "In self-limiting conditions such as contact dermatitis hydrocortisone ointment may be the local application of choice."

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*Cortril (brand of hydrocortisone free alcohol) Topical Ointment. 1.0% (10 mg.) available in 1/6th oz. tubes; 2.5% (25 mg.), in 1/6th oz. tubes.

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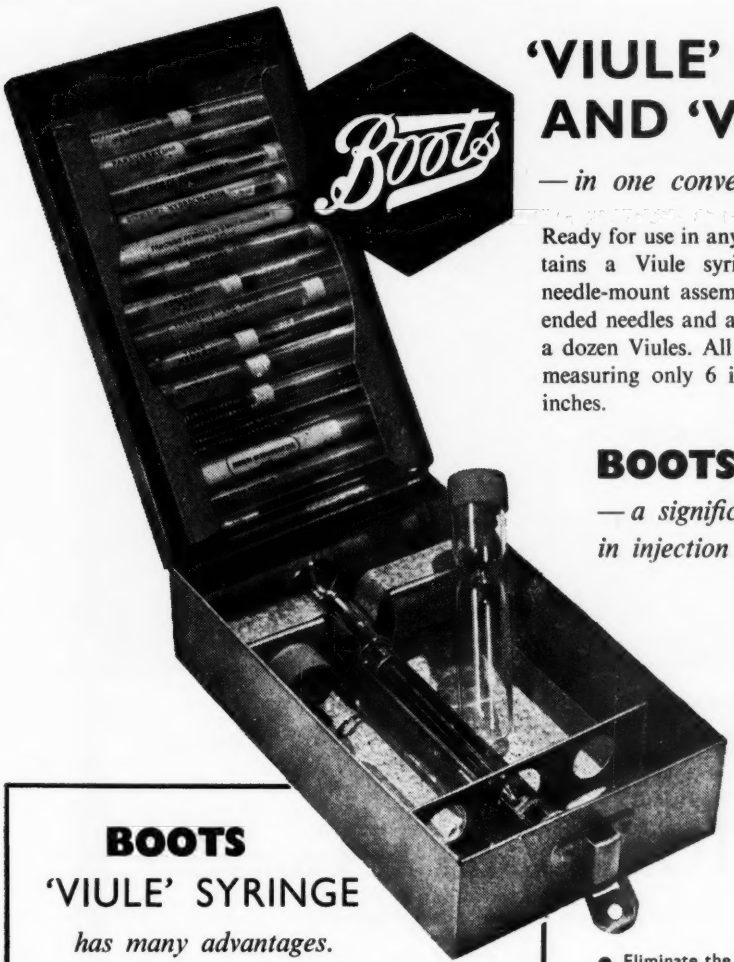

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REDAKSIONEEL · EDITORIAL

NOVOBIOSIEN: NOG 'N NUWE ANTIBIOTICUM

Antibiotica word deur bakterieë, swamme en aktinomisete geproduseer. Die vermoë om hulle te produseer is nie kensketsend van die genus of selfs die soort nie, maar van besondere tipes van die organisme. Dit is derhalwe nie verrassend nie dat nuwe antibiotica gedurig beskryf word. Sommige van hulle is dan ook van kliniese waarde.

Die jongste skeikundige koeël wat tot die antibiotiese bewapening toegevoeg is, is afgelei van 'n nuwe soort aktinomiseet, *Streptomyces niveus,* wat geïsoleer is uit 'n grondmonster wat in Queens Village, N.Y., bymekaargemaak is. Die voormalige generiese naam *streptonivisien* (die Upjohn Company) en *cathomisien* (*Merck & Co., Inc.*) is kragtens 'n ooreenkoms geskrap, en deur *novobiosien* vervang. Dit was 'n verstandige stap, veral in die geval van *streptonivisien* wat, gesien die fonetiese verwarring wat bes moontlik met die reeds goed gevestigde *streptomisien* kon ontstaan, eintlik niks gehad het om dit aan te beveel nie. Novobiosien omskryf derhalwe nou 'n antibioticum wat onafhanklik deur 3 organisasies aangekondig is—die Upjohn Company (wat die naam *Albamycin* aan hierdie produk gegee het); Merck & Co., Inc. (wat die nuwe antibioticum *Cathocin* noem), en Chas. Pfizer & Co. (wat die handelsnaam *Cardelmycin* gebruik).

Studies[1] om die waarde van novobiosien te bepaal, het bewys dat dit aktief *in vitro* teen talle Gram-positiewe bakterieë en 'n paar Gram-negatiewe bakterieë is. Dit het besonder doeltreffende beskerming aan muise verleen

1. Wilkins, J. R., Lewis, C. en Barbiers, A. R. (1956): Antibiot. Chemo., **6,** 149.

NOVOBIOCIN: ANOTHER NEW ANTIBIOTIC

Antibiotics are produced by bacteria, fungi and actinomycetes. The ability to produce them is not characteristic of the genus or even the species, but of particular strains of the organism. It is not surprising, therefore, that new antibiotics continue to be described, some of them of value clinically.

The most recent chemical bullet added to the antibiotic armament is derived from a new species of actinomycete, *Streptomyces niveus,* isolated from a soil sample collected in Queens Village, N.Y. The former generic names *streptonivicin* (the Upjohn Company) and *cathomycin* (Merck and Co., Inc.) have by agreement been abandoned and replaced by *novobiocin.* This was wise, particularly in the case of streptonivicin, which had nothing to commend it because of the phonetic confusion which would almost certainly have occurred with the well-established *streptomycin.* Novobiocin therefore now describes an antibiotic announced independently by 3 organizations—the Upjohn Company (which has adopted for this product the name *Albamycin*); Merck and Co., Inc. (which calls the new antibiotic *Cathocin*) and Chas. Pfizer and Co. (which uses the trade name *Cardelmycin*).

Evaluation studies[1] have established that novobiocin is active *in vitro* against many Gram-positive bacteria and a few Gram-negative ones. It was very effective in protecting mice against *M. aureus, Past. multocida* and *P. vulgaris.* Moderate *in vivo* activity was demonstrated against *Str. haemolyticus* and *D. pneumoniae.* In the concentrations tested,

1. Wilkins, J. R., Lewis, C. and Barbiers, A. R. (1956): Antibiot. Chemo., **6,** 149.

teen *M. aureus, Past. multocida* en *P. vulgaris.*

Middelmatige *in vitro*-bedrywigheid is gedemonstreer teen *Str. haemolyticus* en *D. pneumoniae.* In die konsentrasies wat getoets is, was dit ondoelmatig teen *S. typhosa-, S. paratyphi B-* en *Ps. aeruginosa*-infeksie.

Bakterieë het weerstand van die penisillientipe teen novobiosien ontwikkel, of 'n standaard-kweking nou al gebruik is, dan wel een wat bekend is as weerstandskragtig teen antibiotica. Daar was geen bewys van kruisweerstandskragtigheid nie—nòg met die laboratoriumsoorte nòg met kwekings (verkry van pasiënte) wat bekend was as weerstandskragtig teen penisillien, die tetrasikliene, ens. Mikrokokki wat onder laboratoriumtoestand weerstandskragtig teen novobiosien gemaak is, het gevoelig vir die tetrasikliene, penisillien, streptomisien, chloramfenikol en eritromisien gebly.

'n Opvallende eienskap by die mens is die hoë en langdurige peil van novobisien in die serum (oor 'n tydperk van 24 uur) wanneer dit mondeling geneem word in hoeveelhede wat, na verwag word, in die terapeutiese dosisreeks val. Na opneming word die antibioticum dwarsdeur die liggaamsweefsels en -vloeistowwe (insluitende die brein en die serebrospinale vloeistof) versprei, maar daar is 'n buitengewoon hoë konsentrasie in die lewer, die gal en die dikderm.[2] Dit is eienskappe wat die kliniese gebruik daarvan kan beïnvloed, en dit voorsien ons van 'n addisionele wapen by die behandeling van infeksies voortspruitende uit weerstandskragtige soorte.

Die basiese inligting is ingesamel. Dit regverdig die kliniese toetsing van 'n nuwe en, in sommige opsigte, 'n nuwerwetse stof wat nog 'n hoofstuk tot die verhaal van die antibiotica voeg—'n verhaal wat geensins klaar vertel is nie.

MEDIESE BYDRAES: INBIND VAN DEEL I

Die uitgewers is bereid om eksemplare van Deel I (Julie-Desember 1955) in te bind in blou stywe linne met goue blokletters (insluitende die intekener se naam in die onderste regterhoek op die buitekant van die voorste omslag) teen 22s. 6d. per deel, posvry afgelewer.

Lesers wat van hierdie aanbod gebruik wil maak, moet die verskillende nommers van Deel I (saam met hul tjek of posorder) stuur aan:

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In drukletters moet hulle asseblief ook aandui presies hoe hul naam in goue blokletters op die omslag van die ingebinde deel moet verskyn.

2. Taylor, R. M., Miller, W. L. en van der Brook, M. J. (1956): Antibiot. Chemo., **6**, 162.

it was ineffective against *S. typhosa, S. paratyphi B* and *Ps. aeruginosa* infections.

Bacteria developed a resistance of the penicillin pattern to novobiocin, whether a stock culture was used or one already known to be antibiotic-resistant. There was no evidence of cross resistance either with laboratory strains or cultures (obtained from patients) known to be resistant to penicillin, tetracyclines, etc. Micrococci made resistant to novobiocin under laboratory conditions remained sensitive to tetracyclines, penicillin, streptomycin, chloramphenicol and erythromycin.

A striking property in Man is the high and prolonged level of novobiocin in the serum (over a 24-hour period) when it is taken by mouth in amounts expected to be in the therapeutic dosage range. After ingestion the antibiotic is widely distributed throughout the body tissues and fluids (including the brain and the cerebrospinal fluid), but there is an unusually high concentration in the liver, the bile and the large gut.[2] These are properties which may influence its clinical applications and provide us with an additional weapon in the treatment of infections due to resistant strains.

The basic information has now been gathered. This justifies clinical trial of a new and in some ways novel substance which adds another chapter to the antibiotic tale—a tale which has by no means yet been told.

MEDICAL PROCEEDINGS: BINDING OF VOLUME 1

The publishers have arranged for copies of Vol. 1 (July-December 1955) to be bound in blue buckram with gold blocked lettering (including the subscriber's name in the bottom right-hand corner of the outside front cover) at 22s. 6d. per volume, delivered free.

Readers who wish to take advantage of this offer should forward their sets of Volume 1 (together with their cheque or postal order) to:

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They should also indicate in block letters exactly how they wish to have their names gold blocked on the cover of the bound Journal.

2. Taylor, R. M., Miller, W. L. and van der Brook, M. J. (1956): Antibiot. Chemo., **6**, 162.

KORONÊRE HARTKWAAL

DIE MOONTLIKE VERBAND DAARTUSSEN DIE TIPE EN HOEVEELHEID VET IN DIE DIEET

Die oorsake van ateroom is nog onbekend. Tot onlangs toe is die proses as ongeneeslik en as die onvermydelike gevolg van klimmende jare beskou, hoewel daar erken is dat dit op verskillende ouderdomme by verskillende mense voorkom. Moderne navorsingswerk, veral dié wat gedoen is deur Ancel Keys en deur Walker, Higginson, Bersohn, *et al.* (van die Suid-Afrikaanse Instituut vir Mediese Navorsing) het egter aangetoon dat die omvang van ateroom van die koronêre slagare van ras tot ras verskil. Daar is ook getuienis dat dit in die verskillende maatskaplike klasse verskil. Oor die algemeen kom dit vroeër en in 'n ernstiger vorm voor by die meer gevorderde volke en by die groepe wat beter daaraan toe is. Onder hulle is daar oortuigende bewys van 'n onstellende toename van hierdie kwaal wat sowel frekwensie as erns betref. Trouens, as oorsaak van die dood speel koronêre siekte vandag 'n veel groter rol as kanker.

Etlike faktore dra by tot die epidemiese omvang wat koronêre hartkwaal deesdae aangeneem het. Afgesien van familievatbaarheid, is mans meer kwesbaar as vrouens tot die ouderdom van 70. Hoewel geslags- en ander genetiese faktore in 'n baie groot mate onbeheerbaar is, kom koronêre hartkwaal veel meer dikwels voor by vroue in die gegoede groepe en volke as by arm mans in dieselfde groepe. Beheerbare omgewingsfaktore sluit dieet, oefening, emosionele spanning en die rookgewoonte in. Sonder enige twyfel kan daar nou verklaar word dat dieet die belangrikste van die voorgenoemdes is en ook die een wat die maklikste gekontroleer kan word.

Die mees verdagte item is die hoeveelheid en die soort vet in die dieet. Keys het gelet op die noue ooreenstemming tussen die totale opneming van vet, die vet–kalorie-verhouding, en die voorkoms van koronêre hartkwaal ('n onderlinge verhouding wat waarskynlik teweeggebring word deur die peil van bloedcholesterol wat bes moontlik vet in die bloed vervoer). Die cholesterolpeil toon weer 'n eweredige verband met die hoeveelheid vet in die dieet en die voorkoms van koronêre hartkwaal by verskillende volke en maatskaplike groepe.

Die bloedcholesterolpeil kan gekontroleer word deur die hoeveelheid vet wat ons eet. In groepe met 'n lae bloedcholesterolpeil kom daar ongetwyfeld minder gevalle van koronêre

CORONARY HEART DISEASE

ITS POSSIBLE RELATIONSHIP TO THE TYPE AND QUANTITY OF FAT IN THE DIET

The causes of atheroma are still obscure. Until recently the process was regarded as irreversible and the inevitable result of ageing, although it was recognized that it occurred at very different ages in different people. Modern studies, particularly those of Ancel Keys and of Walker, Higginson, Bersohn *et al.* (from the South African Institute for Medical Research) have shown, however, that the extent of coronary atheroma varies very much from race to race. There is also evidence that it differs in different social classes. In general, it occurs earlier and more severely in the more advanced nations and in the better-off groups. Among these there is convincing evidence of its alarming increase in frequency and severity. Indeed, coronary disease has become far more important than cancer as a cause of death.

Several factors contribute to the modern epidemic proportions of coronary heart disease. Apart from familial susceptibility, men are more vulnerable than women up to the age of 70. Though sex and other genetic factors are largely uncontrollable, coronary heart disease is far commoner in females of better-off groups and nations than in poor males in these populations. Controllable environmental factors include diet, exercise, emotional stress and strain and smoking. There can now be little doubt that diet is the most important of these and the one most easily controlled.

An item very suspect is the quantity or type of dietary fat. Keys has noted a very close parallel between total fat intake, the fat : calorie ratio and the incidence of coronary heart disease (an inter-relationship probably related to the level of the blood cholesterol, which may transport fat in the blood). The cholesterol level is closely proportional to the amount of dietary fat and the incidence of coronary heart disease throughout various nations and social groups. This level can be controlled by the quantity of fat eaten. The incidence of coronary heart disease is undoubtedly lower in groups with lower blood cholesterols. There is a good deal of evidence, though it is not final, that a high fat intake (and the resulting high blood cholesterol) are responsible for the increasing incidence of atheroma. This, however, is not the only factor, since equal degrees of atheroma are not

hartkwaal voor. Daar is heelwat bewyse (wat egter nog nie finaal is nie) dat die opneming van baie vet met die daaruit voortvloeiende hoë bloedcholesterol verantwoordelik is vir die toenemende aantal gevalle van ateroom. Dit is egter nie die enigste faktor nie, aangesien 'n gelyke mate van ateroom nie in 'n gelyke mate met trombose geassosieer word nie. Daar moet faktore wees wat beheer oor trombose uitoefen, en in hierdie verband is daar ook onregstreekse getuienis wat vet in die dieet inkrimineer.

VERSADIGDE VERSUS ONVERSADIGDE VETSOORTE

In die jongste tyd word daar vermoed dat dierlike vet miskien skadeliker as plantaardige vet is by die totstandbrenging van koronêre hartkwaal. Die Kliniese Voedingsnavoringseenheid van die W.N.N.R. by die Mediese Skool van die Universiteit van Kaapstad het onlangs aangetoon (grotendeels ten gevolge van die ondernemingsgees van dr. B. Bronte-Stewart en dr. A. Antonis) dat die verskil tussen die vetsoorte nie afhanklik is van hul dierlike of plantaardige oorsprong nie, maar wel van hul versadiging of nie-versadiging, en moontlik ook van hul kettinglengte. Oor die algemeen skyn dit asof onversadigde vetsure veel minder skadelik (en miskien selfs beskermend) is. Daarenteen verhoog versadigde vetsure die bloedcholesterol baie vinnig. Die dierlike vetsoorte is gewoonlik versadig, en die plantaardige soorte onversadig; maar daar is belangrike uitsonderings, bv. botter en palmolie het naastenby dieselfde mate van versadiging. Versadigde vetsoorte is gewoonlik solied, terwyl die onversadigde soorte vloeibaar is.

Die voedselbedryf het onlangs 'n neiging getoon om te versadig, d.w.s. om plantaardige vetsoorte hard te maak, weens die uitwerking wat dit het op die tekstuur en smaaklikheid van voedselsoorte, en veral tertkors. In die Kaapstadse laboratorium is daar aangetoon dat gehidrogeniseerde (verharde) grondboontjievet, anders as die natuurlike produk, die bloedcholesterol verhoog. Daar is baie lank gemeen dat die ondervinding van die Eskimo's 'n weerlegging was van die teorie dat òf die totale hoeveelheid vet òf die hoeveelheid dierlike vet in die dieet 'n belangrike faktor by koronêre hartkwaal is. Hierdie skynbare uitsondering is ook verduidelik deur die Kaapstadse werkers want hulle het aangetoon dat vis en, in 'n mindere mate, seesoogdiere soos robbe en walvisse betreklik onversadigde vet het. Party van hulle was so onversadig dat dit geskyn het asof hulle in staat was om die liggaam teen groot hoeveelhede versadigde vet te beskerm. Dit is derhalwe moontlik dat sekere see-olies die dieet veiliger vir die koronêre slagare kan maak.

equally associated with thrombosis. There must be factors controlling thrombosis and in this connexion indirect evidence also incriminates dietary fat.

SATURATED VERSUS UNSATURATED FATS

It has recently been suspected that animal may be more harmful than vegetable fats in producing coronary disease. The C.S.I.R. Clinical Nutrition Research Unit at the Medical School of the University of Cape Town has recently shown (largely through the enterprise of Dr. B. Bronte-Stewart and Dr. A. Antonis) that the difference between fats is not dependent on their animal or vegetable origin, but on their saturation or unsaturation and possibly their chain length. In general, unsaturated fatty acids seem far less harmful (and may even be protective), whereas saturated fatty acids raise the blood cholesterol rapidly. Animal fats are usually saturated, and vegetable fats unsaturated; but there are important exceptions, e.g. butter and palm oil have about the same degree of saturation. Saturated fats are usually solid and unsaturated fats liquid.

Recently the food industry had tended to saturate, i.e. harden vegetable fats, because of the effect on the texture and palatability of foods, notably pastry. In the Cape Town laboratory it has been shown that hydrogenated (hardened) peanut fat raises the blood cholesterol, unlike the natural product. Esquimau experience was for long held to disprove the theory that either the total fat or the amount of animal fat in the diet was important in coronary heart disease. This apparent exception has also been explained by the Cape Town workers since they showed that fish and, to a less extent, marine mammals, e.g. seals and whales, have relatively unsaturated fats. Some of them are so unsaturated that they seem able to protect the body against large quantities of saturated fats. It is possible, therefore, that certain marine oils may play a part in making diets safer for the coronary arteries.

THE EISENHOWER ARTERIES

The public is understandably anxious to know what can be done to prevent coronary artery disease. Although it has for long been well known that medical practitioners are particularly likely to die from this condition, this was regarded as an occupational hazard. There seemed almost no concern about the matter

DIE EISENHOWER-SLAGARE

Dis heeltemal begryplik dat die publiek baie graag wil weet wat gedoen kan word om koronêre hartkwaal te voorkom. Hoewel dit lank reeds 'n bekende feit is dat mediese praktisyns hoogs waarskynlik aan hierdie besondere siekte sal sterf, is dit as 'n beroepsgevaar beskou. Dit het geskyn asof daar geen besondere besorgdheid oor die saak bestaan het nie, behalwe in die huislike kring van diegene wat aan die gevaar blootgestel was. Maar die publiek dwarsdeur die wêreld is wakkergeskud en besorgd oor die miokardiale toekoms gemaak deur die toestand van president Eisenhower se slagare. Die weergalose publisiteit (insluitende kardiologiese gegewens en elektrokardiogramme) wat met die Amerikaanse president se hartaanval vergesel gegaan het, het gekom op 'n tydstip toe daar reeds wydverspreide belangstelling in dieet en gesondheid was. Aangesien iedere burger wat kan sien, hoor of lees nou bewus is van die potensiële gevaar wat hom bedreig, sal daar geen afname wees in die belang wat hy in die toekoms in hierdie lewensbelangrike probleem gaan stel nie. Mediese praktisyns moet derhalwe verwag dat daar van hulle verlang sal word om advies oor hierdie saak aan 'n belese en goedingeligte publiek te gee.

Op die huidige stadium is dit nog veels te vroeg om 'n dogmatiese antwoord te gee. Vir mans bo 40, en, in geringer mate, vir mense van albei geslagte en alle ouderdomme, sal dit 'n verstandige beleid wees om die vet in hul dieet tot 'n redelike peil te verminder. Die Suid-Afrikaanse Nasionale Voedingsraad meen dat as 30% van ons kalorieë van vet afkomstig is, dit verstandig is. So 'n vermindering van vet het ook 'n bykomstige voordeel, nl. dat dit swaarlywigheid by middeljariges teëwerk, en diëte eenvoudiger en makliker verteerbaar maak. Maar die totale hoeveelheid vet in die dieet moet nie te veel verminder word nie. Vet is van besonder groot waarde omdat dit 'n dieet smaaklik maak; dis ook 'n waardevolle bron van energie, en bevat dikwels belangrike vitamiene. Om minder as 20% van ons kalorieë van vet te verkry, is onverstandig.

Definitiewe getuienis dat sekere vetsoorte definitief onwenslik terwyl ander definitief wenslik is, sal miskien later gevind word. Die verbruik van 'n redelike hoeveelheid onversadigde vet kan selfs die gevaar wat uit kunsmatig gehidrogeniseerde (versadigde) vetsoorte voortspruit, verminder. Dit is iets waaroor daar op die oomblik alleen gegis kan word. Die werk wat tans gedoen word, sluit 'n studie in van die hoë bloedcholesterol by die ontwikkeling van ateroom, sowel as die effek van die dieet op die neiging tot trombose.

Die talle faktore (behalwe die dieetkundige faktore) wat bes moontlik koronêre trombose tot gevolg kan hê, moet nie oor die hoof gesien word nie. Die hoeveelheid en die soort vet is nie die enigste verdagte dieetkundige kenmerke nie. Die soort en die hoeveelheid proteïne en sellulose kan ook van belang wees, en dit geld ook vir die soort en die hoeveelheid koolhidrate.

Dit is derhalwe raadsaam om 'n waarskuwing te uit teen dieetkundige giere en kwaksalwers, en ook teen die onbillike aansprake wat in die advertensies van sekere voedselsoorte, en veral vette en olies, gemaak word. Enige dogmatiese verklaring wat op hierdie tydstip gedoen word, is waarskynlik verkeerd en kan selfs misleidend wees. Die verstandige weg is die weg van gematigheid vir sover dit dieet, oefening, rook en spanning betref.

except in the domestic circles of those at risk. But the public the world over was galvanized into an acute and continuing concern about its own myocardial future by the state of President Eisenhower's coronary arteries. The unprecedented lay publicity (including cardiological data together with electrocardiograms) which accompanied the American President's heart attack, came at a time when there was already a widespread interest in diet and health. As every citizen who can see, hear or read is now acutely aware of the potential hazard which may fell him, his interest in this vital problem will endure from now on. Practitioners can therefore be expected to have to advise a literate and well-informed public on this matter.

At present it is much too early to give any dogmatic answer. A wise policy is for men over 40 and, to a less extent, for people of both sexes at all ages, to reduce, to a reasonable level, their dietary fat. The South African National Nutrition Council has set 30% of calories from fat as a sensible target. Such a reduction of fat has the added effect of avoiding obesity in middle-aged people, and of making diets simpler and more digestible. But the reduction of total fat in the diet must not be pressed too far. Fat is extremely valuable because it makes diets palatable; it also provides a valuable source of energy and often contains important vitamins. To get less than 20% of our calories from fat is undesirable.

Definite evidence may yet be found that certain fats are definitely undesirable, and others definitely desirable. Consumption of a reasonable amount of unsaturated fat may even lessen the dangers due to artificially hydrogenated (saturated) fats. At present this is entirely conjectural. Work in progress includes a study of high blood cholesterol in the development of atheroma, as well as the effect of diet on the tendency to thrombosis.

The many factors (other than dietary ones) which may contribute to coronary thrombosis must not be overlooked. The amount and the kind of fat are not the only suspect dietary features. Type and quantity of protein and of cellulose may also be important, as may be the type and quantity of carbohydrate.

It is therefore best to warn against dietary fads and quacks, and also against unwarranted claims in the advertisements of various types of foods, particularly of fats and oils. Dogmatic statements made at this time are likely to be incorrect and may even be misleading. The wise course is sensible moderation in diet, exercise, smoking and tension.

MEGIMIDE AND DAPTAZOLE

IN BARBITURATE INTOXICATION

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The promiscuous use of barbiturates has reached alarming levels. At present drugs of this group are the most popular agents in attempted suicide.

The treatment of such cases with the central analeptics (picrotoxin, leptazol, etc.) has not proved satisfactory and in serious cases where coma has been prolonged, mortality rates of up to 20% have been reported.[1]

It is the purpose of this paper to report on a case of barbiturate intoxication treated with two recently introduced barbiturate antagonists, Megimide and Daptazole.

CASE REPORT

Mrs. P., aged 18 years, was admitted at 12 a.m. Six hours before, she had taken 18 grains of secobarbital (Seconal) and about 35 grains of phenobarbitone. This is probably a very conservative estimate, as subsequent questioning revealed that she had, in addition, swallowed a mixed assortment of other tablets, one of which contains phenobarbitone.

She was deeply unconscious. Respiration was shallow and slow. The skin was cool. No cyanosis was evident. There was general muscular flaccidity. Her pulse rate was 60 per minute and poor in volume. Blood pressure: 70/40 mm. Hg. Her pupils were moderately dilated, unresponsive to light and the corneal reflex was absent. No reflexes were obtainable in the upper or lower limbs. The plantar response was equivocal.

Treatment. It was considered that, 6 hours having elapsed since the ingestion of the drug, no useful purpose would be served by gastric lavage.

An intravenous infusion of 5% glucose in saline was set up. At intervals of 10 to 15 minutes over the next 2 hours, Megimide 10 c.c. (50 mg.) and Daptazole 1 c.c. (15 mg.) were given separately into the base of the rubber tubing of the infusion set. At the end of this 2-hour period, the patient had received 70 c.c. of Megimide and 7 c.c. of Daptazole.

At this stage she showed definite signs of recovery. Her blood pressure had improved, her respiration was deeper and voluntary movements were present. Reflexes had returned and she appeared to be in a state of light anaesthesia.

At 6 p.m., i.e. 4 hours later, it was considered that mild regression had occurred, and a further 30 c.c. of Megimide and 3 c.c. of Daptazole were given in divided doses, as before, between 6 p.m. and 9 p.m.

She now became very restless; intramuscular paraldehyde 5 c.c. was given and repeated during the night.

The following morning, the picture was one of restless sleep, but the patient was easily aroused on mild stimulation.

Further progress was uneventful and recovery was complete within a further few hours, approximately 24 hours after commencing treatment. The only additional medication used was 1,000,000 units of penicillin given on admission and repeated for 2 days thereafter.

DISCUSSION

Daptazole is considered to be an excellent respiratory stimulant. It enhances the effect of Megimide which is a direct barbiturate antagonist.

Shulman *et al.*[2] have stressed the need to bring the patient to a state of light anaesthesia, usually within 2 hours.

In this 'safe' state, there is a return of reflexes, voluntary movement and improvement in the blood pressure and respiration. Spontaneous recovery to full consciousness then gradually ensues within 8-12 hours. If regression should occur, particularly if long-acting barbiturates (phenobarbitone) have been taken, further small doses of Megimide and Daptazole may be given.

It must be stressed that continued watchfulness is the essence of successful treatment.

Any indication of possible overdosage, as evidenced by marked restlessness, usually responds well to intramuscular paraldehyde, repeated as necessary.

In Shulman's fairly large series of cases, 10 regressed and required additional therapy, while 30 were readily restored to a safe state within a few hours and required no further treatment.

CONCLUSION

On the basis of the few reports in the literature as well as the experience in this case, it is felt that Megimide and Daptazole represent a distinct advance in the treatment of barbiturate intoxication.

Megimide is supplied in vials of 100 c.c. or ampoules of 10 c.c. each containing 5 mg. per c.c.

Daptazole, being unstable, is issued in vials containing 15 mg. of the dry powder and is reconstituted by the addition of 1 c.c. aq. dest. or saline. It should be used within 12 hours of preparation.

Even with very much larger doses than those required in the treatment of this case, no serious side effects have been noted and in the opinion of Shaw,[3] these drugs in a therapeutic dosage range are quite innocuous.

SUMMARY

A case of barbiturate intoxication successfully treated with Megimide and Daptazole is described.

It is evident that any preparation which acts as a direct barbiturate antagonist and thereby materially reduces the need for prolonged and difficult nursing care, represents a much needed addition to our therapeutic armamentarium.

OPSOMMING

'n Geval van barbituraat vergiftiging wat suksesvol behandel is met Megimide en Daptazole, word beskryf.

Dit is duidelik dat enige preparaat wat 'n direkte teenmiddel vir barbituraat is, en daardeur die noodsaaklikheid vir 'n langdurige en moeilike verpleging verminder, 'n welkome toevoeging tot ons terapeutiese armamentarium is.

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ACUTE VOLVULUS OF THE SIGMOID COLON

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The relative infrequency in practice of acute volvulus of the sigmoid colon taxes the surgeon's acumen in arriving at a pre-operative diagnosis.

A. O., an only child of 14 years, was seen in the early hours of the morning of 21 August 1954 complaining of acute abdominal cramps and vomiting for the previous 7 hours. He had intelligence above the average and stated that at 12.30 p.m. on the preceding day he suddenly developed, while at school, a severe colicky pain over the whole of the abdomen. The pain tended to decrease as he passed flatus and it disappeared within the hour, when he was entirely free of pain until 8 p.m. that evening. He had had lunch and dinner without ill effect; his appetite was good.

At 8 p.m. the pain suddenly recurred with extreme severity. The cramps came on at regular intervals and each attack made him writhe in agony. Within a short while he developed a feeling of extreme fullness in the epigastrium. There had been no vomiting until his mother had given him some salt water, which he immediately vomited, and the vomitus contained undigested food. A soap and water enema was returned without result. No flatus was passed. The pain continued intermittently until 11 p.m. that night, when another enema was administered without effect or relief of pain. There had been no vomiting since he had taken the salt water.

His family doctor then saw him and he was given 50 mg. of pethidene by mouth. As this did not have the desired effect, a further 50 mg. of pethidene was administered intramuscularly. He obtained some relief from the severe cramps until 3 a.m., when the pain became unbearable and he vomited again. He was seen by me in consultation at 4 a.m. and was immediately admitted to a nursing home.

He was not shocked or dehydrated. Blood pressure: 110/70 mm. Hg. During the interval between spasms the abdomen was extremely distended, with the greatest degree of distension above the umbilicus. Peristaltic waves could be seen passing from the right hypochondrium across the epigastrium to the left hypochondrium. The abdomen was soft and a large balloon-like mass occupied the

whole of the upper abdomen. As soon as a spasm occurred the patient rolled over and assumed a knee-elbow position, the spasm lasting from 1½ to 2 minutes. As soon as the spasm disappeared he lay on his back and appeared quite comfortable. The interval between each spasm varied between 5 to 15 minutes. Rectal examination was negative and no abnormalities were found in the other systems.

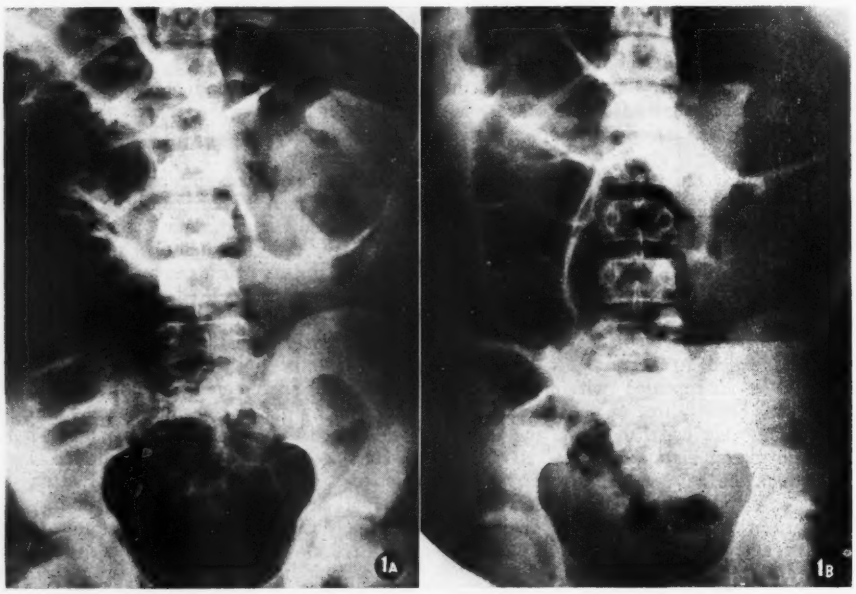
A pre-operative diagnosis of intestinal obstruction was made, the probability being an intussusception of the colo-colonic type, although one felt that the absence of a bloody stool was against the diagnosis of intussusception; 100 mg. of pethidine was given intravenously and straight X-ray films of the abdomen revealed the presence of fluid levels and enormously dilated coils of the ascending, transverse and descending colon (Figs. 1A, 1B).

X-ray Report (*Dr. D. R. Morris*): *Abdomen*: 'Films taken in the supine and erect positions show the whole of the large bowel distended with gas. In the erect film there is a fluid level in the descending colon at about its mid-point. This main fluid level and another smaller fluid level with an air space above it is shown 3 inches lower down.

'In the supine film the striking feature is the absence of the normal shadow created by a descending colon. In spite of this finding the splenic flexure appears to be in the normal position and it is difficult to follow the course of the descending colon and sigmoid on the supine view. It is possible that there is a large redundant loop of descending colon and that this has come over to the right and involved the sigmo-colic region in a volvulus.

'*Conclusions*: There is clearly a large bowel obstruction. This obstruction is in the sigmo-colic region. The commonest cause for a large bowel obstruction here of this character is a volvulus and this would seem a likely diagnosis in view of the abnormal position of what appears to be a large and highly mobile loop of descending colon. In the supine view this loop is shown lying well over to the right of the midline.'

Wangensteen drainage and intravenous therapy (5% dextrose in water) was instituted. At 6 a.m. the abdomen was opened revealing the true nature of the pathology. The whole of the colon from the sigmoid to the caecum was enormously distended. A volvulus at the level of the recto-sigmoid junction of 1½ clockwise turns had occurred. The volvulus was untwisted through 1½ turns with ease and a large well-greased stomach tube was passed through the anus into the colon. This was immediately followed by a tremendous gush of gas and liquid faeces via the tube and the whole of the colon became deflated. Careful inspection of the colon revealed that the bowel was viable and the abdomen was closed without difficulty. Wangensteen drainage and intravenous therapy were maintained for 48



Figs. 1*A*, 1*B*. Straight X-ray films of the abdomen pre-operatively, showing grossly dilated coils of large bowel, and the presence of fluid levels.

hours and the rectal tube was withdrawn 24 hours later. The patient then had a spontaneous bowel evacuation and was discharged on the tenth post-operative day.

After the operation the mother gave the following history:

The patient was born at full term and the pregnancy and birth had been normal. He was breast fed for 8 months and his bowel actions were quite normal. He had the usual children's ailments, of which diphtheria was the most important. Until the age of 11 years he never complained of any abdominal discomfort or constipation. His bowels acted regularly each day. Three years ago he complained of 'tummy-ache' for the first time. This lasted for 2 hours and was relieved without medical attention. A year later, while holidaying at the coast in December, he developed a similar attack of abdominal pain which lasted 2 hours. This time he received medical attention and the mother was told he was suffering from food poisoning. A white mixture was prescribed, but as the pain had disappeared the mixture was not taken. In July 1953 he had another attack of colicky pain, which passed off rapidly after the patient had passed considerable flatus and some slimy material. For the first time it was noticed that the passage of flatus relieved the pain. In August 1953 (one month later) he had the first severe attack, which lasted for longer than 2 hours. His family doctor ordered an enema, which gave him immediate relief with the passage of very considerable flatus. Since August 1953 until the date of the operation he had several attacks of colicky pain which passed off without treatment. Some of these attacks occurred at school, and his swimming coach remembered that after an attack he thought that the boy's abdomen was somewhat distended and advised his mother to have this investigated.

Six weeks after discharge from hospital the patient was referred for barium enema studies (Fig. 2).

Radiological Investigation (*Dr. Eric Samuel*): 'On screening the rectum was seen to fill normally. There was no abnormality at the pelvi-rectal junction. Immediately distal to the pelvi-rectal junction proximal to the pelvic colon there was a narrowing present similar to that seen in the aganglionic segment in Hirschsprung's disease. The pelvic colon itself was grossly enlarged and dilated and there was a loss of haustral pattern. The loop of pelvic colon extended as far as the left hypochondrium. Sufficient barium to outline this loop was run in and the barium only extended as far as the proximal portion of the descending colon. After voiding, the redundancy and mobility of the pelvic loop of colon was clearly seen. At 6 hours the distribution of barium throughout the colon was normal. At 24 hours a large gas bubble in the left hypochondrium was seen.

'*Conclusion*: (1) A barium enema revealed that the rectum itself filled out normally. In the proximal portion of the pelvic colon immediately proximal to the pelvi-rectal junction there was a narrowed area, presumably one of the sites of the volvulus.

Fig. 2. Barium enema showing grossly dilated large bowel.

'(2) An abnormal loop of pelvic colon which was grossly distended and which lay in the left hypochondrium represented a loop which was previously involved in the volvulus.

'(3) The barium was only allowed to run into this distended loop and slightly beyond into the descending colon owing to the enormous quantity of barium which was retained in the pelvic loop.

'*Comment*: There is an enormous redundant loop of pelvic colon present which is grossly distended and dilated. It was not considered advisable to run in more barium than necessary to outline this loop as deaths have been reported from water intoxication following the introduction of large enemas to patients with various degrees of mega-colon.

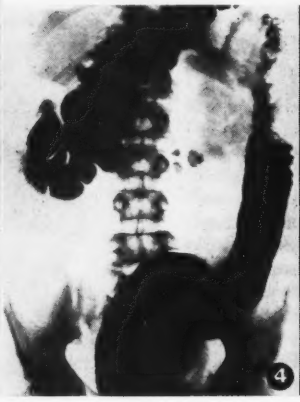
'A group of calcified glands is present in the mesenteric glands.'

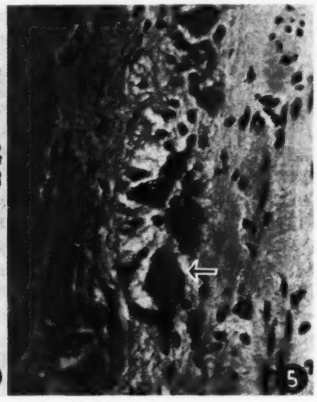
On 11 October 1954 resection of the thickened portion of the sigmoid colon (Fig. 3) was carried out and an end-to-end anastomosis was performed between the descending colon and the rectum. The boy made an uninterrupted recovery and to date has been fit and well. His bowels act daily without any

Fig. 3. Portion of the sigmoid colon resected, showing the extent of the hypertrophy and dilation of the affected segment.

Fig. 4. Barium enema after resection of the grossly dilated and hypertrophied descending colon.

Fig. 5. Photomicrograph of a section of the affected bowel. The arrow indicates sympathetic ganglia in the myenteric plexus.





difficulty. Further barium studies were then carried out. Fig. 4 shows the present position.

X-ray Report (*Dr. Eric Samuel*): 'Screening on 6 December 1955 showed slight dilatation of the rectum as far as the site of surgical resection of the pelvic colon. Proximal to this the colon was slightly dilated and the mucosal pattern was abnormal. There was, however, no hold-up and evacuation of the colon occurred normally. At 24 hours some barium remained in the right half of the colon, which was filled with gas and barium as far as the site of surgical resection.

'*Conclusions*: (1) The rectum itself was slightly dilated and the pelvic colon below the site of surgical section was also slightly dilated.

'(2) Above the site of surgical resection the colon itself was slightly dilated.

'(3) After voiding, evacuation of the colon occurred.

'(4) At 24 hours a considerable quantity of barium remained in the right half of the colon.

'(5) The mucosa in the descending colon above the point of surgical resection showed an altered mucosal pattern.'

DISCUSSION

Volvulus of the sigmoid colon is extremely rare except in the Baltic areas. Pearlman[1] reported that 111 of 215 cases of intestinal obstruction were due to volvulus of the sigmoid colon. Delafield *et al.*,[2] investigating large bowel obstruction in Peru, quoted 78 cases among the Andes Indians. Griffin, Barton and Meyer[3] stated that volvulus of the sigmoid colon was extremely rare in the United States of America. They reviewed 458 cases of large bowel obstruction in the Cook County Hospital between 1937 and 1945; 37 cases were due to volvulus of the sigmoid and only 2.2% of the cases were of the acute type. Gilbert, Dean and Warren Murray[4] reported 21 cases of volvulus of the sigmoid colon during the 5-year period ending April 1951. Of these 18 cases were acute. Another interesting fact which they bring to light was that 15 of these patients were in an institution for mental care. Gerweg, Jr.,[5] states that volvulus of the sigmoid continues to occur twice as often as volvulus of the caecum, and in the U.S.A. accounts for 2 to 3% of obstructions of the large intestine.

Incidence: The age incidence varies from 4-80, 56% occurring in the 51-70 years age group. Most authors report it as 3 times more common in males. The condition can be divided into 2 groups, the acute and the subacute. The *acute type* is commoner in the younger age group, while the chronic or subacute is commoner in the older age group. The acute type manifests itself usually with no previous attacks, is of short duration (usually under 24 hours), there is an equivocal history of constipation, early emesis of a transient nature and generalized abdominal cramp. The onset of symptoms is rapid.

The *subacute type* occurs in the older age group with gradual onset of symptoms, usually with a duration of 102 hours, chronic constipation, late emesis and lower abdominal cramp. There is severe abdominal distension,

absent peristalsis and in over 50% of cases gangrenous bowel. In the acute type there is severe distension, abdominal tenderness and at laparotomy viable or gangrenous bowel. In the acute cases only 2 patients died, both of whom had gangrenous bowel, while in the subacute the mortality rate is over 40%.

Pathology: The entire colon or portions thereof may be many times the normal calibre and it is not uncommon to find loops 6″ or 7″ in diameter. The gut wall is greatly hypertrophied, leathery in appearance and markedly thickened. Haustrations are completely lost. The microscopic appearances are seen in Fig. 5.

The cause has become apparent in that the obstruction is not due to any pathological defect in the colon, but to a neuro-muscular defect in the recto-sigmoid, the rectum or the lower portion of the sigmoid itself.

Because of the deficient neuromuscular innervation, peristaltic waves are unable to pass normally through to the recto-sigmoid area.

The old conception was that the enlarged and thickened colon was abnormal, but there seems little doubt that these are merely the effects which appear secondary to the neuromuscular deficiency in the recto-sigmoid function.

X-ray Findings: Campbell and Smith[6] emphasize certain X-ray characteristics of the sigmoid, viz. a large loop of bowel coming up from the pelvis which is larger than the rest of the distended bowel, and a bird-beak or ace-of-spades deformity evident on barium enema. Bellini[7] states that obstruction due to neoplasm dilates loops of ascending and descending colon to a different diameter from the caecal diameter, whereas in sigmoid volvulus it shows a uniform distension as they are segments of a single coil.

Treatment: There is only one satisfactory curative treatment for either the acute or chronic condition, and that is resection.

The unsatisfactory methods which have been advised are:

1. Proximal decompression or caecostomy.
2. Lateral anastomosis without resection.
3. Detorsion without secondary resection.
4. Any plastic or fixative operation.

Non-operative decompression has been advised in many early cases—the introduction of a sigmoidoscope, and gradual manipulation through the portion of torsion and relief by passage of gas and bowel contents. This method of relief is fraught with danger in unskilled hands and is only temporary. It can be used in chronic cases, but in acute cases laparotomy is indicated.

In acute cases primary resection after untwisting may be dangerous and it is better to allow a week to pass, during which time the bowel can be prepared for resection. Caecostomy may, however, be a life-saving measure in severe cases. Gerweg,[5] however, states that there seems to be no need for caecostomy and little value in the management of volvulus of the sigmoid as it will have no effect on the closed-loop obstruction. The outstanding work of Swenson[8] showed that the fundamental defect must be removed, and every effort must be made to have the anastomosis as low in the rectum as possible. This leaves a segment of minimal length with neuromuscular deficiency.

SUMMARY

A case of acute volvulus of the sigmoid colon in a boy of 14 is recorded.

The cause of the megacolon is due to neuromuscular deficiency in the lower recto-sigmoid area, causing hypertrophy and dilatation of the colon. This then becomes the common denominator causing the volvulus.

Signs, symptoms, clinical appearances, X-ray findings and treatment are described.

OPSOMMING

'n Geval van akute dermknoop in die S-vormige kolon by 'n seun van 14 jaar word beskryf.

Die oorsaak van die megakolon word toegeskryf aan neuro-spiergebreke in die onderste enkelderm-S-vormige gebied wat hipertrofie en verwyding van die kolon tot gevolg gehad het. Dit, dan, word die gemene noemer wat dermknoop veroorsaak.

Die tekens, simptome, kliniese voorkoms, X-straalbevindings en behandeling word beskryf.

The author is indebted to Dr. L. Blackstone who referred the case; to Drs. M. H. Fainsinger, D. R. Morris and H. Jackson, and Drs. E. Samuel, C. Komins, and L. Morris for X-ray examinations and reports; to Drs. S. Sims, J. Gluckman, B. Bloomberg and W. Lewin for pathological reports and photographs.

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TREATMENT OF THE GANGRENOUS INTUSSUSCEPTION

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Any method which will reduce the mortality rate in the treatment of intussusception is of value. Diagnosis is often difficult and the longer the delay the greater the mortality rate. In a series of 796 cases,[1] there was a mortality of 3.1% among those diagnosed in the first 24 hours and of 26.4% in those diagnosed later than the 24-hour period.

The problem in these delayed cases (and even in the early ones) is directly related to the development of gangrenous bowel. There is no doubt in my mind that a sick child does not stand a resection of this gangrenous loop. Elliott Smith[2] introduced in 1953 a procedure which tends to overcome this problem. I have modified his procedure so that in 8 cases there has been no mortality. All these children had gangrene of a loop of the bowel as evidenced by the passage of a slough per rectum. The essence of the procedure is demonstrated in Figs. 1-3.

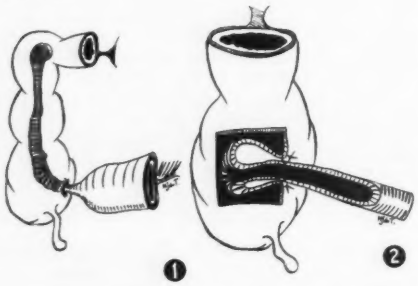
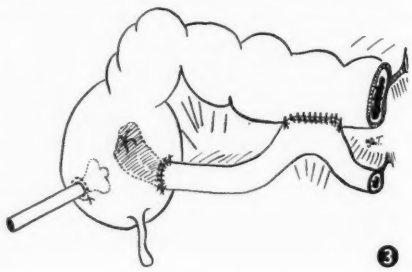


Fig. 1 shows the gangrenous bowel in the colon. If the bowel is gangrenous, a bluish-black colour can be seen shining through the colonic wall. This can be emphasized by a transillumination of the colon. Reduction is attempted. It should be ceased forthwith when difficulty is experienced. It is at this particular stage that one must stop. If the reduction is forced, the gangrenous bowel will 'plop' out and one is faced with the hazard of resecting this gangrenous loop or of exteriorizing it. The first step in the technique is to suture the ileum to the colon with a series of interrupted sutures in a ring-like fashion (Fig. 2). Following this a side-to-side ileo-transverse colostomy is performed (Fig. 3). In a young child the total diameter of the anastomosis need only be 1-1½ inches. The operation is completed by



the insertion of a catheter into the lower part of the ascending colon to act as a vent, both for gas and any presumed toxic products from the entrapped dead bowel. Post-operatively the catheter is connected to a suction apparatus and the general principles for post-operative care of a child are observed. The stools must be watched for the passage of the slough. This usually occurs on the third or fourth day.

The average length of follow-up has been 3 years. No cases presented any complications. Their growth and nutrition has been adequate. One child required further surgery for an adhesive obstruction.

I am presenting this method of treatment of gangrenous intussusception because it is safe, rapid and the mortality from it should be extremely low.

OPSOMMING

'n Metode vir die chirurgiese behandeling van gangreneuse intussussepsie word aangebied. Dit is veilig en vinnig, en die aantal sterftegevalle ten gevolge daarvan behoort besonder klein te wees.

Die prosedure is 'n wysiging van dié wat in 1953 deur Elliott Smith beskryf is.

Onder die 8 gevalle waar hierdie prosedure toegepas is, het daar geen sterfgeval voorgekom nie.

My thanks are due to Dr. H. J. du Toit, F.R.C.S., of the Department of Surgery, University of the Witwatersrand, for the illustrations.

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THE SCOPE OF RADIATION THERAPY

INCLUDING RADIO-ACTIVE ISOTOPES

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(*Continued from p. 252*)

CARCINOMA OF THE BRONCHUS

One of us M. W.[1] has discussed the relative claims of radical surgery and radical radiotherapy with various techniques such as multiple X-ray fields, grid therapy or a combination of X-ray therapy plus the insertion of radon seeds, in a commentary on an excellent article, from the surgical aspect, by Adler and Fuller.[2] It must be obvious that in the early case the best method of dealing with a carcinoma of the bronchus, is surgical. The difficulty is to be certain when the case is still early. Involvement of the mediastinal glands has a disastrous result on the survival rates in carcinoma of the bronchus, as the involvement of the regional glands has in any other malignant condition. The difficulty in a case of inaccessible cancer such as carcinoma of the bronchus (or carcinoma in the alimentary tract) is to determine, before the operation, whether the mediastinal glands are involved. An expert radiological investigation of the mediastinum, with the oesophagus filled with barium, may help. Even then, the percentage of cases found resectable after exploration, is very small. The result is that if we take all the patients seen (and not only those explored and found to be resectable) the 5-year survival rate is deplorably low, even when one considers the very best results. Buchberg *et al.*[3] after analysing the results in 443 cases at the Montefiore Hospital, New York, go so far as to state:

'We believe that in the vast majority of the individuals with bronchogenic carcinoma, certainly the anaplastic form, lung resection is not the answer, regardless how soon the condition is diagnosed and treated.'

They also refer to a series of 7,815 patients with bronchogenic carcinoma collected from leading medical centres in the U.S.A. and in England. This, they say, probably represents the best obtainable results with surgical treatment for bronchogenic carcinoma. They found that only about one third were considered operable, and in half of these the tumour was found non-resectable. Their analysis showed that the 5-year survival rate constituted less than 1% of the original group of patients. Adler and Fuller's results[2] were much better, but were still only 7.7% of a smaller personal series of 100 cases. Price Thomas' figures[4] are from 2-2.5% of all cases presented for treatment, and in Borrie's series[5] there were only 3.8% 3-year survivals of all cases seen.

The results thus vary according to the different authors, owing to their methods of selection of cases as suitable for operation and, no doubt, also to varying preponderant histological types in each series.

In Hilton's[10] series of histologically proved cases treated with radical X-ray therapy, the average duration of life of those with an oat cell or undifferentiated carcinoma was 14 months; with a squamous carcinoma, 18 months and with an adeno-carcinoma, 28 months.

It is difficult to get comparable material for an adequate comparison with radiotherapy results, because very few of the early cases are sent for radical radiotherapy. In Hilton's series of 594 cases of cancer of the bronchus, only 12 cases were considered operable. If treated by radiotherapy when they are early (in the sense that the tumour is still limited and has probably not yet metastasized) there is usually some reason such as the general condition of the patient which has made him unsuitable for operation. The very factors which make a patient unsuitable for operation also mitigate against a good result with radiotherapy. The patient (because of his cardiac or general condition) may not be able to undergo the full course of treatment.

In Fulton's series[6] the survival rate for radi-

cal X-ray (14.7 months) is actually higher than for radical surgery (11.5 months). Both figures are, of course, deplorable. In the sections on *Radio-Sensitivity* and *Radio-Curability* (this Journal, 1955, Vol. 1, pp. 116, 193) attention was drawn to attempts to improve the results of radiotherapy by means of sensitizers, mitotic inhibitors and antibiotics, during the course of X-ray treatment.

Even if the results of radical X-ray therapy are no better than those of radical surgery, there is a vast field here for prophylactic and post-operative radiotherapy, and, in some instances, of pre-operative radiotherapy.

PALLIATIVE TREATMENT

It follows that the large percentage of cases seen at the first examination who are regarded as inoperable (even to the extent that an exploration is not justified) and those cases who are found, at exploration, to be non-resectable, should be given the benefit of palliative X-ray therapy if there are no very serious contra-indications, such as the general condition of the patient.

The method of inserting radon seeds through the bronchoscope practised by Ormerod[7] should be used more frequetly as a palliative method, in combination with X-ray therapy. Moreover, we have already drawn attention to the fact that at times a remarkably long survival may be obtained with this method.

Many a patient derives very real benefit from this palliative treatment. Pain is relieved, cough is diminished, haemoptysis is stopped, an atelectatic portion of a lung may re-expand and pressure on the superior vena cava may be relieved. The patient may frequently resume (or not even give up) his work, during the whole course of treatment. We have had patients aged 75-80 years who continued with their work throughout the whole course of X-ray treatment, maintaining their weight and general condition and even continuing to play golf. Radiologically, remarkable improvement may be seen in some cases on the X-ray films. The tumour may disappear for a time.

Although attempts have been made to resect single or multiple secondary deposits in the lungs (it has been done overseas several times in one of our patients) one is not impressed with the rationale or logic of such heroic surgery. There is no guarantee that when one secondary deposit is resected, others will not appear in a short period. X-ray therapy is the most reasonable method of treatment in these cases. Secondary deposits from bronchial carcinoma elsewhere, as in the skin, bones or brain, should also be treated with radiotherapy. Sometimes these secondary deposits may be the first manifestation of carcinoma of the bronchus. In one case (a woman) secondary deposits were present in the skin for almost a year before the carcinoma of the bronchus became manifest (confirmed by Mr. D. Adler). The histology of the secondary deposits in the skin did not indicate that the primary was a definite carcinoma of the bronchus, nor did the X-ray films show any evidence of neoplasm until some time after the diagnosis had been made by bronchoscopy.

The treatment of carcinoma of the lung, either primary or secondary, with nitrogen mustard was suggested some years ago. It has not given any worthwhile results according to the literature. Neither Ackerman and Regato[8] nor Adler[9] (who employed it in a number of cases) found it to be of any value. Theoretically, too, there is no very sound reason for giving nitrogen mustard and causing unpleasant side effects for a localized tumour other than of the lymphoma or Hodgkin's types. (We shall deal with the intravenous injection of radio-active gold for certain types of tumour in the *Isotope Section*).

The problem of correct treatment of carcinoma of the lung has assumed considerable importance because there is no doubt that there has been a marked increase in the incidence of this neoplasm. Whereas 25-30 years ago one was seldom asked to treat these cases by radiotherapy (it was only 22 years ago that the first successful resection was done by Graham on a physician reported still to be alive 2 years ago) one is now called upon to treat numerous cases with radical, prophylactic or palliative X-rays. To-day radiotherapy plays an ever increasingly important role in the treatment of carcinoma of the lung.

OPSOMMING

Die probleem van die korrekte behandeling van longkanker het van groot belang geword weens die opvallende toename in die voorkoms van hierdie gewas.

Daar is 'n uitgestrekte gebied vir profilaktiese en na-operasie-radioterapie.

Talle gevalle word vandag met radikale, profilaktiese of palliatiewe X-strale behandel.

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SWELLINGS OF THE NECK

MIDLINE SWELLINGS

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and

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The midline of the neck includes the submental triangle, the thyrohyoid and cricothyroid membranes and the suprasternal fossa. Swellings in this region, therefore, include those which are strictly in the median line, as well as those which are close to it (paramedian).

From the clinical point of view, midline swellings are conveniently considered under 2 headings:

A. Those which are typically midline in situation.

B. Others which include paramedian and asymmetrical swellings, as well as swellings which are fortuitously or apparently midline.

A. TYPICAL MIDLINE SWELLINGS

1. CONGENITAL MALFORMATIONS

The majority of swellings which are typically midline are of congenital origin and include the following:

(a) *Thyroglossal Cyst* (Figs. 1-3). Thyroglossal remnants are frequently responsible for the formation of midline swellings in the neck. The thyroid anlage forms at the base of the tongue, a site which is marked by the foramen caecum in the adult. From this point it descends through the tongue and usually behind the hyoid bone to its location on the tracheal rings. In the region of the thyroid cartilage it deviates from the midline, usually to the left. As the primitive thyroid descends in the neck, it maintains its connexion with the pharynx by a tubular structure, the thyroglossal duct, which normally becomes obliterated at a later stage. If fusion of the hyoid bone is delayed until thyroid descent has already occurred, this tract is included in the bone and may run directly through it.

If the thyroglossal duct fails to obliterate, cysts may develop in its course at any level between the foramen caecum and the suprasternal notch. The vast majority occur below the level of the hyoid, usually just below the bone or opposite the notch of the thyroid cartilage. (In the latter situation they are deviated from the midline, usually to the left).

Thyroglossal cysts are lined by columnar or ciliated epithelium, contain clear mucoid material and are connected to the tongue by the rest of the thyroglossal duct, which is usually not clinically visible or palpable. Infection may reach the cyst via the duct and the chronic irritation of repeated episodes of inflammation may result in squamous metaplasia of the epithelium and the production of yellow, pasty contents. Severe infection results in partial destruction of the lining membrane and the formation of pus which may discharge on the surface.

The cysts may appear at any time from birth to old age, but the vast majority are first noticed in childhood. The swellings vary in diameter from 0.5-7 cm. and more, but are

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usually 1-2 cm. (Fig. 1). They are tensely fluctuant, smooth and rounded with well-defined edges, but the larger cysts tend to be misshapen because of compression by the overlying fascia. They can be moved slightly upwards and downwards and also from side to side. Characteristically, they move upwards on swallowing and on protrusion of the tongue (Figs. 2A, 2B). The cysts are usually brilliantly translucent.

Should infection supervene, pain, tenderness and redness of the overlying skin develop and the swelling becomes less well-defined and difficult to differentiate from other inflammatory swellings (Fig. 3). The pus may break through on the surface, leaving a discharging sinus which tends to open and close intermittently over a period of years.

The successful treatment of thyroglossal cysts and fistulae demands radical excision of the whole tract and this entails removal of the central portion of the hyoid bone and dissection right up to the base of the tongue.

(b) *Ectopic Thyroid.* Median etopic thyroids are extremely rare and are usually closely related to the tongue. Although usually intralingual or supralingual (Fig. 4) in situation, they may also be sublingual. If goitrous changes occur in the latter, a midline swelling of the neck appears, projecting from beneath the tongue and above the hyoid bone. These swellings closely resemble tense thyroglossal cysts but are not translucent.

The recognition of ectopic thyroid tissue is most important because the patient usually has no thyroid in the normal position. When operating on suspected thyroglossal cyst it is therefore essential to ascertain whether the swelling is indeed cystic and, if it is not, to explore the neck lower down for normal thyroid tissue.

(c) *Sequestration Dermoids* (Figs. 5-9). Epidermal inclusion cysts of the neck are not common. They are produced by epithelial remnants caught in the lines of embryonic fusion of the skin edges. They are lined by

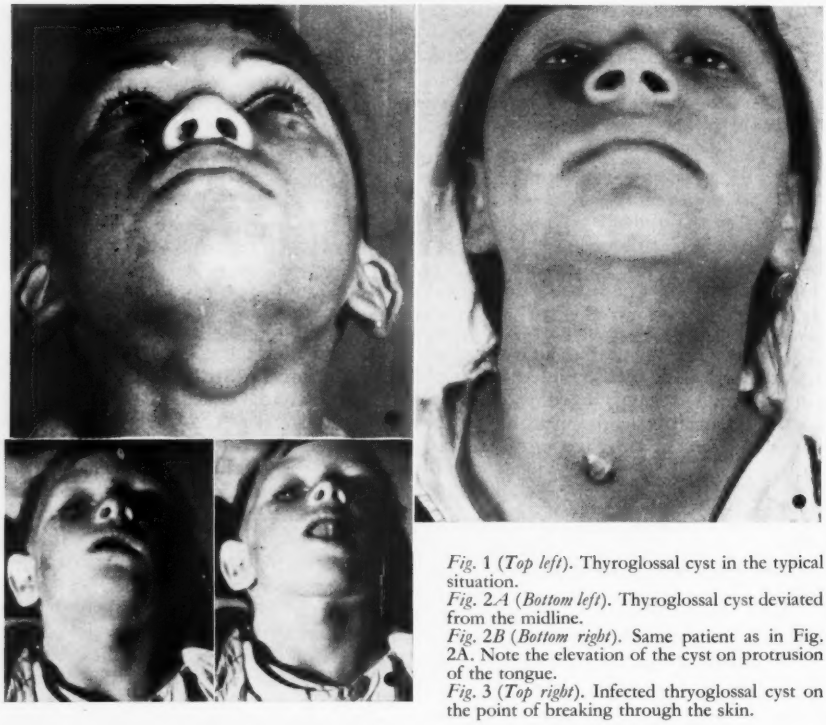


Fig. 1 (*Top left*). Thyroglossal cyst in the typical situation.
Fig. 2*A* (*Bottom left*). Thyroglossal cyst deviated from the midline.
Fig. 2*B* (*Bottom right*). Same patient as in Fig. 2A. Note the elevation of the cyst on protrusion of the tongue.
Fig. 3 (*Top right*). Infected thryoglossal cyst on the point of breaking through the skin.

squamous epithelium and contain sebaceous-like material.

Dermoid cysts are usually present from birth and may occur anywhere in the midline of the neck. Small and uncomplicated cysts are

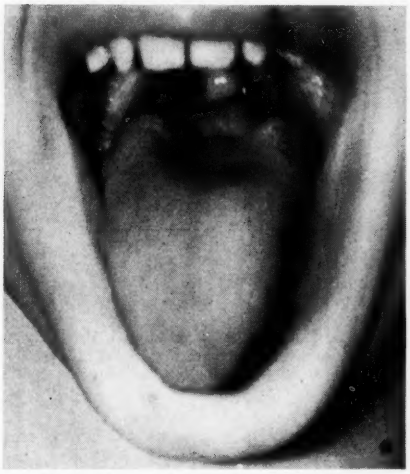


Fig. 4. Supralingual ectopic thyroid. These patients often have no thyroid tissue in the normal situation.

usually symptomless. On the other hand, large sublingual dermoids may interfere with the movements of the tongue and those at the thoracic inlet may compress adjacent structures, e.g. the trachea. Infection of a dermoid cyst will lead to pain, increase in size of the swelling and the signs of acute inflammation.

The cysts, which are rounded, are situated superficially in the subcutaneous tissues. Characteristically they have a 'doughy' consistency, but they may be tensely cystic. The cysts are smooth and mobile and usually have a point of attachment to the overlying skin. They are not translucent.

Sublingual dermoids (Fig. 5) occupy the submental triangle producing an appearance of fulness from the symphysis menti to the hyoid. They tend to displace the tongue upwards and forwards and can be palpated underneath the tongue, through the floor of the mouth.

Small dermoids near the hyoid bone may be difficult to distinguish from thyroglossal cysts (Fig. 6). However, they are more superficial, non-translucent and do not move up on protrusion of the tongue.

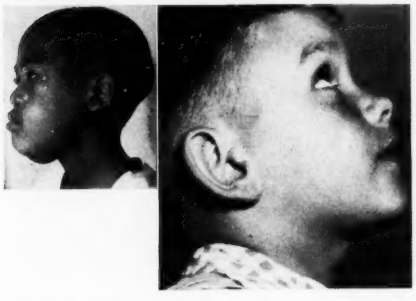


Fig. 5 (*Left*). Sublingual dermoid. This swelling did not bulge underneath the tongue (like a hygroma) but could be felt through the floor of the mouth.
Fig. 6 (*Right*). Midline dermoid simulating a thyroglossal cyst. The swelling did not move upwards on protrusion of the tongue and was not translucent. It had the typical features of a sequestration dermoid.

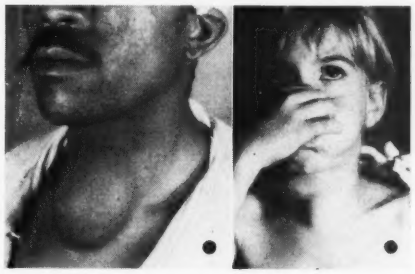


Fig. 7 (*Left*). Large midline dermoid in the suprasternal fossa.
Fig. 8 (*Right*). Partially substernal dermoid rendered prominent by forced expiration.

Cysts in the suprasternal fossa are usually superficial and may attain a considerable size (Fig. 7). We have also encountered a number of dermoids situated partially substernally and deep to the cervical fascia, although superficial to the depressor muscles of the larynx, and unattached to deeper structures. These cysts become more obvious on forced expiration or tightening of the neck muscles (Figs. 8, 9a and 9b).

(d) *Thymic Cysts.* On very rare occasions a thymic rudiment may be the cause of a midline swelling of the neck. The thymus develops from the third pharyngeal pouch. Although its tubular stalk eventually disappears, it may persist for a considerable time. This stalk passes deep to the vessels and nerves of the

neck and also deep to the depressor muscles of the larynx to reach the thorax.

Part of this stalk may persist in the form of a substernal cystic swelling of which we have seen 2 examples. These cysts were lined by columnar, ciliated epithelium and were

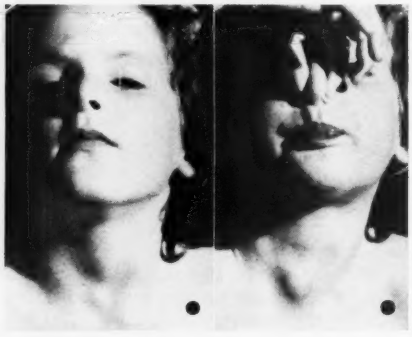
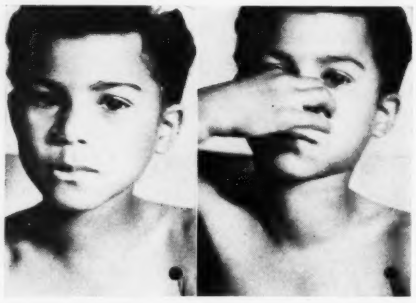


Fig. 9A (Left). Partially substernal dermoid barely visible.
Fig. 9B (Right). Same case as in Fig. 9A. The swelling is rendered prominent by forced expiration.

situated deep to the infra-hyoid muscles and free from any connexion with the thyroid or other adjacent structures. On account of this deep situation they became evident only on forced expiration (Figs. 10A, 10B). Both were translucent.

(e) *Subhyoid Bursa.* A small synovial bursa is situated on the postero-inferior aspect of the dorsal hollowed-out surface of the hyoid bone, lying between it and the thyrohyoid membrane. It is firmly attached to the hyoid and its long axis lies transversely.

It is often stated that enlargement of this bursa is one of the causes of midline swellings of the neck. Neither of us has ever met such a condition and we feel that most cases of



Figs. 10A, 10B. Partially substernal thymic cyst before and during forced expiration. This cyst was translucent and passed deep to the infra-hyoid muscles.

so-called 'subhyoid bursitis' are really examples of thyroglossal cysts or lymphangiomatous malformations.

OPSOMMING

Middellyn-swelsels van die nek word gerieflikheidshalwe onder 2 opskrifte oorweeg:

A. Dié wat tipies op die middellyn geleë is;

B. Dié wat paramediaan- en asimmetriese swelsels insluit, sowel as swelsels wat toevallig of skynbaar op die middellyn geleë is.

Aangebore misvormings wat tipiese middellynswelsels is, word geïllustreer en beskryf.

SKELETAL CHANGES IN ENDOCRINE AND METABOLIC DISORDERS

IX. PRECOCIOUS PUBERTY (ISOSEXUAL PRECOCITY)

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By far the commonest type of precocity is the so-called 'constitutional' (or non-organic) variety, and even this is rare in boys. Hypothalamic disease, granulosa cell tumour of the ovary and Albright's syndrome are other rare causes of precocity in girls.[2] In boys, tumour or hyperplasia of the adrenal cortex and interstitial cell tumour of the testis are rare causes. (The adreno-genital syndrome in females is almost always accompanied by masculinization).

Constitutional precocity in girls includes not only advanced sexual development, with ovulation, but also advanced bone growth and

bone age, though (because of early closure of epiphyses) the final stature is short. Obesity is sometimes associated, while in the case illustrated here a considerable hypertension remains unexplained.

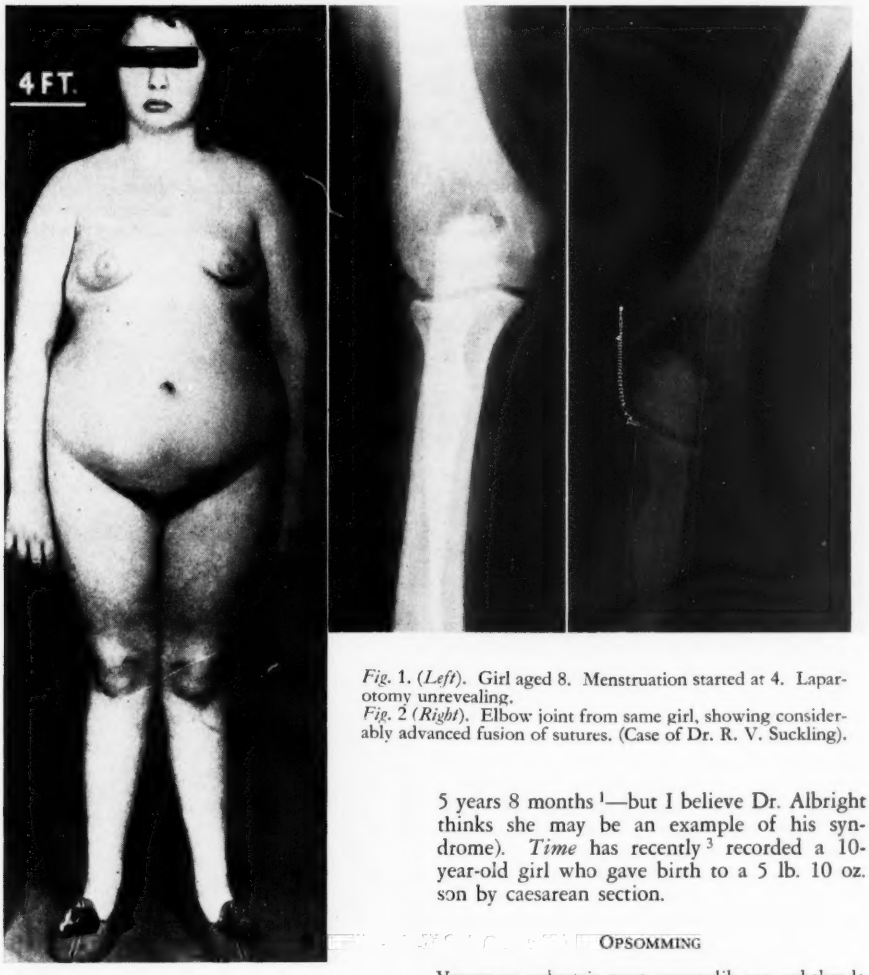

Fig. 1. (*Left*). Girl aged 8. Menstruation started at 4. Laparotomy unrevealing.
Fig. 2 (*Right*). Elbow joint from same girl, showing considerably advanced fusion of sutures. (Case of Dr. R. V. Suckling).

We may re-emphasize that any organic cause for sexual precocity is very rare. Furthermore, the granulosa cell tumour is stated to be always palpable. It is therefore evident that laparotomy is quite unjustified unless virilism, a mass or high 17-ketosteroid output is present. The treatment lies in understanding only. It must be remembered that these girls may become pregnant (*vide* the Peruvian, Lina Medina, who was delivered of a live baby at 5 years 8 months [1]—but I believe Dr. Albright thinks she may be an example of his syndrome). *Time* has recently [3] recorded a 10-year-old girl who gave birth to a 5 lb. 10 oz. son by caesarean section.

OPSOMMING

Vroegrype puberteit moet gewoonlik aan onbekende ‚algemene' oorsake toegeskryf word.

Gevorderde been-ouderdom en vroeë beenentsluiting kom voor.

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MYOCARDIAL INFARCTION IN A SOUTH AFRICAN BANTU

REPORT OF A CASE

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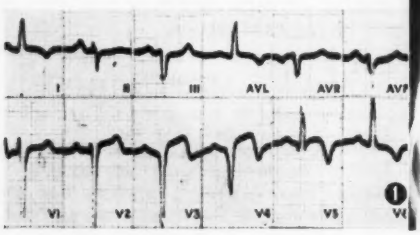
The rarity of myocardial infarction in the South African Bantu prompts the following case report.

M. N., a Swazi male without any known Indian or European forebears, aged about 75 years, had been working as a general labourer in Johannesburg for the past 20 years. There was no reason to believe that his diet had differed from that of the average South African Bantu.

In August 1953 he was admitted to hospital complaining of breathlessness and swelling of the feet for the past 6 months. In the previous week he had started coughing up blood; this symptom had brought him to hospital. He denied a history of chest pain or paroxysmal nocturnal dyspnoea.

Examination revealed an elderly, spare male who was not distressed. His sputum was tinged with blood. Temperature 100°F. He had the signs of congestive heart failure, viz. a raised jugular venous pressure, oedema of the legs and sacrum, an enlarged tender liver and crepitations at the lung bases. His heart was enlarged and the apex beat was heaving and lay in the 6th interspace in the anterior axillary line. There was a soft mitral systolic murmur and the aortic second sound had a tambour quality. Blood pressure, 130/100 mm. Hg. He had arteriosclerosis of the brachial, radial and fundal arteries. There was no obvious phlebothrombosis of the legs. Radioscopy revealed a moderately enlarged, boot-shaped heart which pulsated poorly. The ECG showed inverted T waves in V6, AVL and lead I. In precordial leads V3 to V5 there was a deep Q wave with elevated ST segments and inverted T waves (Fig. 1). His blood count showed 15 g.% of Hb, 7,600 leucocytes per c. mm., his E.S.R. (Wintrobe) was 4 mm. and an Eagle test was negative.

Although there was no history of chest pain, the ECG suggested that he had sustained a recent anterior or antero-lateral myocardial infarct and the state of heart failure was thought to account for the normal E.S.R. He was treated as a case of coronary thrombosis, possibly with pulmonary embolism and was given anticoagulants and Mersalyl. His temperature subsided within a week and he recovered from his heart failure within 3



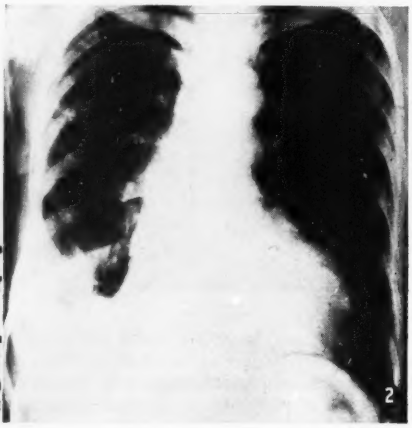


Fig. 1. The elevated S-T segments persisted unchanged for 2 years.
Fig. 2. Radiograph of the heart showing a shelf on the left ventricular border.

weeks, but the ECG abnormalities persisted unchanged.

He disappeared for 9 months and then returned complaining of swollen feet. He was again found to have heart failure but his ECG was unchanged and radioscopy this time revealed a shelf-like projection of his left heart border (Fig. 2) which showed paradoxical pulsation. He was now thought to be suffering from a ventricular aneurysm. He recovered from his heart failure in a month. He was finally admitted in April 1955 and died soon after reaching the ward.

The heart weighed 480 g. On section the anterior surface of the left ventricle showed 3 aneurysmal sacs, containing laminated thrombus. The walls of the aneurysm were composed of dense fibrous tissue replacing the normal musculature; the endocardium proximal to the aneurysm was replaced by dense collagenous tissue (Fig. 3).

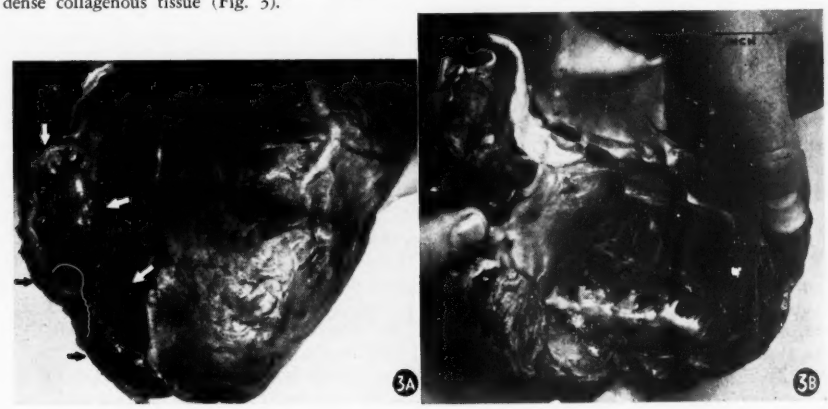


Fig. 3. Section of the left ventricle showing aneurysmal sacs containing thrombus.

The anterior descending branch of the left coronary artery was completely occluded in its upper part by thrombus. The remaining coronary vessels showed mild atheroma without significant encroachment on the lumen. The thoracic and abdominal aorta, the pulmonary and renal arteries also showed mild atheroma. The lungs were congested but showed no other abnormality.

Comment. Coronary thrombosis with left ventricular aneurysm.

DISCUSSION

In recent years statistical studies have confirmed the clinical impression that coronary artery disease takes a serious toll of life in middle age and is apparently on the increase in countries like the United States of America and the United Kingdom.[1-3]

Attention, therefore, is being focussed on those communities which enjoy a relative immunity from the disease to determine whether they are distinguished by some common factor. Post-mortem studies have shown that severe coronary atheroma and myocardial infarction are rare in the South African Bantu[4, 5] and clinicians are agreed that angina pectoris and coronary thrombosis are just as rarely encountered in the wards. The Bantu is not, however, peculiar in this respect since the disease is also rare amongst the Natives of Rhodesia and East Africa.[6, 7] Moreover, it is generally agreed that coronary sclerosis is less frequent amongst American negroes than Whites.[8] Nor is this low incidence confined to Negro races, since it is also encountered amongst Chinese and Japanese.[9]

In the past no convincing explanation has been advanced for the varying incidence of coronary disease in different communities. In the American Negro lack of emotional stress[8] has been suggested but on unconvincing evidence. In the Bantu an accessory branch of the left coronary artery has been described[10] but this finding could hardly account for the low incidence of myocardial infarction amongst them since the coronary arteries rarely show atherosclerosis.

The current vogue is to explore the relation between dietary fat intake and coronary atherosclerosis. Atheromatous plaques contain cholesterol, and both atheroma and hypercholesteraemia have been produced in certain animals by feeding them on diets of high cholesterol content.[11] In human experiments it has been shown that the serum cholesterol level is related to fat intake and that com-

munities eating less fat have comparatively low serum cholesterol levels, and a lower incidence of atherosclerosis.[3] In the South African Bantu the available evidence seems to support this hypothesis. Walker and Arviddson[12] have shown that the serum cholesterol level of the South African Bantu is lower than that of Americans. As they point out, however, vegetarians even with comparatively high fat intakes have low serum cholesterol levels and they suggest that in the Bantu the pattern of the diet, viz. its high residue content, may also be a factor in determining the cholesterol level.

SUMMARY

1. The clinical records and autopsy findings of a case of myocardial infarction due to coronary thrombosis in a South African Bantu are described.

2. Coronary thrombosis is a rare disease in the South African Bantu and in other communities subsisting on a diet of low fat content.

OPSOMMING

1. Die kliniese gegewens en die lykskouingbevindings in 'n geval van hartspier-infarkt te wyte aan koronêre trombose by 'n Suid-Afrikaanse Bantoe word beskryf.

2. Koronêre trombose is 'n seldsame siekte onder die Suid-Afrikaanse Bantoes en in ander gemeenskappe wat lewe van 'n dieet met 'n lae vetinhoud.

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THE AMOEBIC COMPLEMENT FIXATION TEST

AN EVALUATION

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The high incidence of gastro-intestinal disorders in most countries, and the difficulty in demonstrating *E. histolytica* in the stools of these patients in Johannesburg, have focused attention on the complement fixation test for amoebiasis as a diagnostic aid. An additional stimulus in the evaluation of such a test is the occurrence of cases of 'extra-intestinal' amoebiasis, such as amoebic hepatitis, where no intestinal symptoms are present. In over 5,000 specimens of faeces examined by us in cases of intestinal disorder, *E. histolytica* was discovered in less than 0.5%, despite the fact that for each specimen 4 preparations (2 concentrated and 2 unconcentrated) were examined. This low figure is at variance with the incidence quoted elsewhere. In New York City Bassler[8] found the parasite in 113 instances in 1,500 stool examinations (about 8%); in Chicago Young *et al.*,[14] examining 13,000 faecal specimens from 5,048 persons with gastro-intestinal symptoms, found the parasite in approximately 3%, and Dolkart, Halpern and Cullan[15] in the same city, found the parasite in 60 out of 2,836 patients (about 2%). Nicholson and De Dominicis[10] suggest an incidence of 5-10% in the U.S.A.

Craig[1, 2, 4, 5, 13] first used antigenic extracts of *E. histolytica* for an amoebic complement fixation test. In 1927 he showed that alcohol extracts of the parasite possessed specific complement-fixing properties. In 1929 he published the results of tests on 623 sera. Of these, 67 (10.7%) yielded + + + or + + + + reactions. *E. histolytica* was found in the faeces in 61 (91%); 556 (89.2%) of the specimens yielded a negative result to the test, and 5 of these patients (1%) showed *E. histolytica* in the faeces; 169 (30.3%) exhibited other protozoa. In 1937 he found 175 (17.5%)

persons yielding a positive blood test, 157 (89.7%) of whom excreted *E. histolytica* out of 1,000 persons; while of the remaining 825 who yielded a negative result to the complement fixation test only 12 (1.4%) exhibited the parasite in the faeces; 176 (25%) had other species of amoeba in the excreta.

Craig states that the percentage of false positive results in the complement fixation test is small, that there is a higher percentage of positive results in carriers than in acute cases, that there is a high percentage of positives in amoebic hepatitis cases, and that the test becomes negative shortly after treatment, usually within 2-4 weeks. In his series 85-90% of positive results were obtained in symptomatic amoebiasis and 70-80% in asymptomatic or latent infections. He obtained 'false positive' reactions in cases of ulcerative colitis, but few in other conditions. In his view the test has a definite value and he suggests that the persistence of a positive test indicates the persistence of the parasite.

Rees *et al.*[6] were of the opinion that the limitations of the test were due to the bacteria present in the medium in which the amoebae were grown for the preparation of the antigen. Using a single species of bacterium as the symbiont, these workers (basing their conclusions on the results of tests in 101 cases) suggested that this antigen possessed a high degree of specificity. Sodeman and Lewis[7] recommended the use of the test as a diagnostic aid, and Kent and Rein[9] (using the antigen prepared by Hynson, Westcott and Dunning) thought that the test provided a valuable laboratory adjunct to diagnosis.

Nicholson and De Dominicis,[10] reporting on 60 cases in which the parasite was observed microscopically in the faeces in 46 (38 cyst carriers and 8 trophozoites) remarked that the complement fixation test 'would be of value'.

Rita[11] carried out complement fixation tests on 63 cases of amoebiasis with positive results in 92%. The antigen, however, also reacted with 'positive Wassermann sera' and therefore this worker was of the opinion that negative results alone were of value in diagnosis. Hussey and Brown[12] performed the test on 275 persons suffering from intestinal and hepatic amoebiasis and other diseases, using the antigen prepared by Hynson, Westcott and Dunning. In 124 cases where the parasite was found in the faeces, 3 (2.4%) yielded a positive result and 121 (97.6%) were negative. In 116 cases where the parasite was not demonstrated in the faeces, the complement fixation test was positive in 5 (4.3%) and negative in 111 (95.7%). In 12 proven cases of hepatic amoebiasis the test was positive in 10 (83.4%) and negative in 2 (16.6%). The test was positive in 4 out of 5 'probable' amoebic hepatitis cases (80%) and negative in 1 (20%). In 49 cases with various other diseases, including hepatitis, 4 yielded a weakly 'false positive' amoebic complement fixation test, the diagnosis being clonorchis infection, malaria, possible chromoblastomycosis and *B. proteus* infection respectively. These workers are thus of the opinion that the amoebic complement fixation test is of use in hepatic amoebiasis, that a positive result is of importance, but that negative results may occur in proven cases. Negative results were obtained in cases of leishmaniasis, malaria, Echinococcus cyst infection, infectious mononucleosis, intestinal carcinoma, rickettsial pox, sprue, syphilis, ascariasis and trichiniasis.

Dolkart, Halpern and Cullen,[15] examining 2,836 patients in the Chicago area suffering from gastro-intestinal symptoms and a few of undetermined origin, found the amoebic complement fixation test positive in 125 cases, of which 19 had amoebae in the faeces; in 106 the parasite could not be demonstrated. In 41 cases the parasite was found in the faeces but the complement fixation test was negative.

Fulton, Joyner and Orpwood-Price[16] obtained negative results with the test in rats experimentally infected with *E. histolytica*, but the rat is stated to react poorly to infection. They noted that the antigen prepared with *E. histolytica* acted specifically, when tested with *E. coli*. Of 265 sera tested, positive complement fixation test results were obtained in 91 and negative in 174. Of the latter, there was no history of amoebiasis in 142 but in the remaining 32 there was some clinical or pathological evidence of the disease. The authors were of the opinion that the test would be of value if the antigen was improved.

Kenney,[17] using a micro-Kolmer technique, found the test positive in 20 of 22 persons excreting trophozoites (90.9%) and in 2 of 7 cyst passers (28.6%). In 120 cases which contained parasites other than *E. histolytica* in the faeces, 4 (3.3%) yielded a positive result with the test. In 98 cases with intestinal symptoms but who exhibited no parasites of any kind 7 (7.1%) gave a positive result with the test and in a further 56 cases, with no intestinal symptoms or amoebic history, only 1 yielded a positive result. This author was of the opinion that the test was of value in intestinal cases.

Buchman, Kullman and Margonis[18] reviewed the literature and concluded that the

test appeared to be specific. They reported that the test was performed on 553 patients, none of whom was clinically a case of amoebiasis. The test was positive in 49 cases, all of which yielded negative results with the Kahn test. Despite repeated faeces examinations (and in some cases sigmoidoscopy) only 1 of 47 of these cases showed the presence of the parasite. In 63 proven amoebiasis cases 21 (33%) yielded a strongly positive result and a further 3 were weakly positive. Most of the positive tests reverted to normal after treatment in 2-4 weeks, some remaining positive for over 500 days and one for 865 days. The authors stated that their results agreed with most of those in the available literature which indicated that the test was specific because a higher percentage of positive reactions occurred in proven amoebic cases than in control cases. However, it was stated that a high percentage of false positive reactions also occurred.

McDearman and Dunken[19] obtained negative results with the test in all 263 hospital employees, none of whom exhibited symptoms. Of 22 patients suffering from extra-intestinal amoebiasis, 19 gave a positive result to the test (5 cases of liver abscess, 4 of hepatitis and 13 with both liver and lung involvement). Of 2,329 hospital patients 67 (3%) gave a positive result with the test, but of these 19 had extra-intestinal and 32 intestinal amoebiasis leaving 16 positive reactors (0.7%) with no evidence of amoebiasis. These workers found no statistically significant relationship between the amoebic complement fixation test and the Kolmer complement fixation test for syphilis. Thus positive results were obtained in 86% of cases of extra-intestinal amoebiasis and in 15% of intestinal infection, compared with the figures of 82% and 2.4% respectively reported by Hussey and Brown.[12]

Elsdon-Dew and Maddison[20] obtained negative results in 58 blood donors. They examined 625 specimens from 425 Africans of whom 319 showed active amoebae in the faeces, 38 with liver disturbance but negative tests on the faeces, and 4 with liver disturbance but whose faeces were not examined. In 29 cases of proved liver abscess 28 yielded a positive result; in 30 cases of liver pathology, where amoebae were present, 15 yielded a positive result and 15 were negative; and in a group of 27 cases of liver pathology, where amoebae were not found, 11 yielded a positive result and 16 were negative. Of 363 cases of proven intestinal amoebiasis 63% gave a positive result with the test. The authors were of the opinion that the more chronic the case, the greater was the possibility that the complement fixation test would be positive.

PRESENT INVESTIGATION

We report the results of 556 sera submitted from 532 patients complaining of intestinal or extra-intestinal symptoms and in almost all of whom amoebiasis was considered by the clinician in the differential diagnosis.

For the initial tests the antigen used was that prepared by Hynson, Westcott and Dunning, but the large majority of tests was performed with antigen supplied by Dr. C. E. Roach, M.D., Head of the Medical Department, The Lilly Research Laboratories, Indianapolis, U.S.A. Without the assistance of Dr. Roach and the Lilly Research Laboratories this investigation would have been impossible. Initially fresh guinea pig complement, obtained by cardiac puncture was used, but later dried preserved guinea pig serum* was obtainable.

The specimen sera were tested in a dilution of 1:2; 3-4 MHD of complement was used (50% haemolysis standard); fixation of complement, antigen and serum was allowed for 4 hours at 0-5°C; the erythrocyte indicator system (sheep cells sensitized with 1:3000 dilution of amboceptor) was then added to the tubes and the results read after 30 minutes' incubation in a water bath at 37°C. The requisite controls for the sera under test (antigen, complement and erythrocytes) were included with each test. The results were recorded as −, ±, +, ++, +++ and ++++, according to whether there was 100% haemolysis in the test specimen, 80-90% haemolysis, 70%, 50%, 20% or complete absence of haemolysis. The estimation of percentage of haemolysis both in the titration of complement and in the reading of the final results was obtained by comparison with a series of tubes prepared on the day of the test and graduating from 0%, by 10%, to 100% haemolysis.

The results of these tests are shown in Table I, correlated with the *clinical diagnosis* provided by the clinicians attending the patients.

Where definite clinical diagnoses were made, the test agreed with the diagnosis in 76% of patients, the test was positive and at variance with the clinical diagnosis in 6% (Group D), and the test was negative and at variance with the clinical diagnosis in 3%. In the remaining 15% of patients (where the clinical diagnosis was doubtful) the test could not be assessed.

Analysis of Group D (Test *positive;* Clini-

*Prepared by Burroughs, Wellcome & Co. Ltd., London.

TABLE 1

Group	Number of Tests	Number of Patients	Percentage.
A. Amoebic Complement Fixation Test negative. Clinical Diagnosis: Not Amoebiasis.	313	310	58
C. Test positive. Clinical Diagnosis: Amoebiases.	106	95	18
C. Test positive. Clinical Diagnosis: Doubtful.	64	58	11
D. Test positive. Clinical Diagnosis: Not Amoebiasis.	32	30	6
E. Test negative. Clinical Diagnosis: Doubtful.	25	24	4
F. Test negative. Clinical Diagnosis: Amoebiasis.	16	15	3
Total	556	532	

cal Diagnosis: *Not amoebiasis*), reveals that 12 of the 32 positive results were recorded as +, 9 as ++, 10 as +++, and 1 as ++++.

In the 16 cases in Group F (Test *negative;* Clinical Diagnosis: *Amoebiasis*) the parasite was present in the faeces in 5 at the time of the test, 2 had exhibited the parasite in the faeces at some previous date, 4 were diagnosed as amoebic hepatitis and 4 as 'clinical amoebiasis'.

In only 11 cases in Group B (Test *positive;* Clinical Diagnosis: *Amoebiasis*) were sera submitted for repeat tests after treatment. Of these, 2 cases which initially yielded +++ results reverted to +, one patient initially ++++ reverted to +, and the remaining 8 patients showed no reduction in antibody titre after treatment.

SUMMARY AND CONCLUSIONS

It is emphasized that the clinical diagnoses recorded are those of the attending physicians and are based mainly on the clinical findings and the results of specific therapy. The clinicians may have been influenced by the results of the test in arriving at their clinical diagnosis. These diagnoses, however, were not made until the patients' progress had been under observation for several months following the test in each case.

The results of 556 amoebic complement fixation tests on 532 patients complaining of abdominal and intestinal symptoms are recorded. In 76% of patients the test was in accord with the clinical diagnosis; in 6% the test yielded false positive results; in 3% there were false negative results, and in 15% no correlation could be made.

In only a few cases were specimens submitted for evaluation of treatment. In some the antibody titre dropped after therapy, and in others it remained unchanged.

OPSOMMING

Die resultate van 556 amebiese komplementbindingsreaksies met 532 pasiënte wat oor abdominale en ingewandsimptome gekla het, word beskryf. By 76% van die pasiënte het die toets met die kliniese diagnose ooreengestem; by 6% van die gevalle het die toets vals-positiewe resultate opgelewer; by 3% vals-negatiewe resultate, en by 15% was dit nie moontlik om enige korrelasie te vind nie.

In slegs 'n paar gevalle is monsters voorgelê vir die bepaling van die waarde van die behandeling. By sommige het die teenstof-titer ná terapie gedaal, en by ander het dit onveranderd gebly.

We are deeply grateful to Dr. C. E. Roach, M.D., Head of the Medical Department, the Lilly Research Laboratories, Eli Lilly & Co., Indianapolis, U.S.A., without whose co-operation this investigation would have been impossible.

We also wish to record our thanks to Miss H. Galansky, Mrs. W. Rodda and Miss I. Wolmer for their technical assistance, and to our medical colleagues who responded so willingly to our questionaires.

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DIHYDROSTREPTOMYCIN AS A FIXATIVE

FOR RIBONUCLEIC ACIDS IN CELLS

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It became apparent, in the course of investigations on the changes in the Nissl substance of ganglion cells under the influence of snake venoms and drugs, that the fixation technique used was of the utmost importance. The distribution pattern and stainability of the Nissl substance which contains an important percentage of ribonucleic acid varied with several fixing fluids to such an extent that any modification from so-called normality to hyperchromatism could be produced at will. It was therefore decided to study the action of several substances normally used in the fixation of tissues for their action on ribonucleic acids in test tube experiments to obtain a formula which, theoretically at least, promised to yield the best results. The following substances were investigated: formalin, acetic acid, alcohol, acetone, picric acid, potassium bichromate, mercuric chloride, acriflavin and dihydrostreptomycin.

The reason for involving dihydrostreptomycin in this investigation were the statements [1-5] that nucleoproteins could be precipitated from their solutions by streptomycin at pH 7.5 and that this precipitate could be redissolved by raising the pH to 8-9.

A 5% solution of yeast ribonucleic acid was prepared with a minimal amount of 10% NaOH. The solution was neutralized with 10% acetic acid (litmus as indicator) and filtered till clear. The following observations were made using equal volumes of ribonucleic acid solution and fixing fluids:

Formalin 5%: no precipitate.

Formalin 10%: no precipitate.

Picric acid aqueous saturated solution: no immediate precipitate but one after several minutes.

Potassium bichromate 3%: no precipitate.

Mercuric chloride 1%: no precipitate.

Acetic acid 10%: slight precipitate.

Ethyl alcohol up to 60%: no precipitate.

Ethyl alcohol 70%: slight precipitate.

Ethyl alcohol 80% and 90%: definite precipitate.

Acetone gave the same results as those obtained with ethyl alcohol in the corresponding concentrations.

Acriflavine 0.1% had a strong precipitant action in an acid environment up to the point of neutrality. The alkaline reaction was not tested for obvious reasons.

Dihydrostreptomycin sulphate from 0.1% to 1% did not precipitate a neutral ribonucleic acid solution. With acidification of the mixture precipitation starts at pH 3.5 and is complete at pH 2.5. This last reaction was conveniently reached by adding 5 ml. glacial acetic acid to 95 ml. dihydrostreptomycin-ribonucleic acid mixture. Dilution of the dihydrostreptomycin solution to 0.1% still gave a strong precipitant reaction. This dihydrostreptomycin-ribonucleic acid precipitate could be brought into solution by raising the pH above the 3.5 level.

Formalin, acetic acid, alcohol and dihydrostreptomycin were chosen for further investigation. Acriflavine was discarded because it caused a very fine granular precipitate with an acacia gum solution which was to be used in perfusion fixation technique. No such a precipitate was formed by acriflavine with an arabic gum solution, but in a 5% concentration this solution was difficult to filter clear of particles, a fact which is essential in the perfusion of tissues.

For the demonstration of Nissl substance in ganglion cells it seems necessary to precipitate this substance and to prevent agglutination and diffusion as far as possible. If therefore the dihydrostreptomycin is combined with a substance having a strong protein-precipitant action, it seems possible that, on penetrating the cell, a layer of precipitated protein may be formed inside the cell membrane. This layer may prevent a rapid penetration of the dihydrostreptomycin with post-mortem changes as a possible result.

The influence of the fixing substances on proteins was tested by adding to 1 ml. fresh egg albumin diluted 1:5 the following solutions in amounts of 9 ml.:

Formalin 10%, alcohol 50%, acetic acid

5% or dihydrostreptomycin 1%. Acetic acid and dihydrostreptomycin did not cause a precipitate, formalin only a slight turbidity, but a massive pricipitate was observed in the case of alcohol.

The influence of formalin, acetic acid and alcohol on a dihydrostreptomycin solution was also studied and it was found that formalin and acetic acid did not form a precipitate, but that alcohol in concentrations of 50% and higher precipitated the dihydrostreptomycin. Dihydrostreptomycin was not precipitated with alcohol in concentrations below 50% if the pH was 3.5 or lower. Furthermore, it was found that the dihydrostreptomycin-ribonucleic acid precipitate could be dissolved in alcohol of 50% if the pH was above 3.5. At a higher alcohol concentration the reaction had no visible influence.

The above-mentioned test tube observations lead to the following conclusions:

(*a*) The fixing fluid should contain dihydrostreptomycin in a concentration of 0.1-1%.

(*b*) The pH of this fluid should be between 3.5-2.5.

(*c*) Formalin should be added as a general fixative. In consequence of these considerations the fixing fluid was made up to the formula:

Acacia gum solution 5%	850 ml.
Formalin	100 ml.
Glacial acetic acid	50 ml.
Sodium chloride	7.65 g.
Dihydrostreptomycin	2.0 g.

Before use the fluid must be filtered repeatedly until no solid particles remain.

The dehydration of the tissues, previous to clearance and embedding, can start with alcohol 50% without washing out the fixative. If a lower alcohol concentration is preferred, acetic acid should be added to at least pH 3.5.

This fixing fluid was tried out in animal experiments in about 100 cases, using the perfusion-fixation technique. The results with this method can be called excellent compared with those obtained by conventional techniques such as formalin, potassium bichromate formalin or the Carnoy and Bouin type of formulae.

If the fixation technique is carried out properly, followed by an adequate dehydration, clearing and embedding technique, constantly good results are obtained:

(*a*) Well-defined cells which do not show a pericellular space, clearly-defined Nissl bodies without diffusion of the Nissl substance into the cytoplasm.

(*b*) Excellent stainability with the techniques tried out:

Ehrlich's acid haematoxylin, iron haematoxylin, phosphotungstic haematoxylin, methylene blue, toluidine blue, azureosin, cresyl violet, methyl green-pyronin and chrome alum gallocyanin. The cell nuclei could be stained well with the Feulgen technique.

With regard to the last 2 techniques, it should be noted that for the chrome alum gallocyanin stain made up as previously described[6] the staining period is 72 hours at room temperature. In the case of the Feulgen stain hydrolysis at 60° C. takes 30 minutes for optimal results.

On comparison of the above results with conventional fixation techniques the following advantages are obvious:

(*a*) No shrunken or distorted ganglion cells, as evidenced by the absence of pericellular spaces.

(*b*) Well-defined Nissl bodies which do not show any tendency to diffuse into the cytoplasm.

(*c*) The assurance that the Nissl pattern of the ganglion cells approximates the pattern found in the living cells owing to the rapid penetration of the different fixing substances used in combination with the perfusion technique.

(*d*) The use of dihydrostreptomycin as described enables the investigation of the changes of ribonucleic acid contents of cells to be carried out during different phases of cellular function, such as stimulation and depression.

SUMMARY

The use of dihydrostreptomycin as a cytological tool for the investigation of ribonucleic acid containing structures is described.

OPSOMMING

Die gebruik van dihidrostreptomisien as 'n cytologiese middel vir die ondersoek van strukture wat ribonukleïensuur bevat, word beskryf.

This investigation has been made possible by a grant received from the Council for Industrial and Scientific Research in 1954.

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PREPARATE EN TOESTELLE

CHLOROMYCETIN APLICAPS

'N OFTALMIESE SALF

P. D. & Co. (Pty.) Ltd., die Suid-Afrikaanse filiaalmaatskappy van Parke Davis & Company, kondig die beskikbaarstelling aan van Chloromycetin Aplicaps, 'n Chloromycetin-oogsalf in 'n unieke verpakking.

Chloromycetin Aplicaps is klein, bottelvormige, buigbare gelatienkapsules met 'n verlengde ‚nek' waardeur die Chloromycetin-oogsalf, 1%, uitgedruk word vir plaaslike aanwendig. Een van die besware teen 'n oftalmiese salf in 'n buisie is dat so 'n buisie 'n moontlike bron van herbesmetting vir die oog kan wees—veral waar die produk oor 'n lang tydperk gebruik word, of in 'n kliniek waar dieselfde buisie bes moontlik vir meer as een pasiënt gebruik word. Chloromycetin Aplicaps bied u 'n gerieflike metode om 'n enkele eenheid salf toe te dien. Daarbenewens word die gevaar van kontaminasie aansienlik verminder want die salf in die oorblywende Aplicaps is beskerm in 'n verseëlde kapsule.

Indikasies: (1) Akute en chroniese bakteriese oogbindvliesontsteking veroorsaak deur die organismes *Escherichia coli, Haemophilus influenzae, Staphylococcus aureus* (*Micrococcus pyogenes*), *Streptococcus haemolyticus*, Morax-Axenfeld en andere.

(2) Epidemiese follikulêre, chroniese katarale, en insluitingsvorms van oogbindvliesontsteking.

Dosis en toediening: Om die Chloromycetin Aplicap te gebruik, word die punt van die kapsule met alkohol afgevee. Die ent word dan met 'n skoon instrument afgesny, en die romp van die Aplicap word saamgepers om die inhoud uit te druk. Hierdie inhoud moet alles op een slag gebruik word m.a.w. 'n gedeelte daarvan moet nie vir latere gebruik bewaar word nie.

Chloromycetin Aplicaps word gewoonlik twee maal per dag gebruik—in die oggend en weer in die aand. Met die oog op die verskeidenheid van oftalmiese toestande wat op plaaslike behandeling met Chloromycetin sal reageer, en weens die variasies wat bes moontlik by individuele pasiënte aangetref kan word, sal die dosis verskil wat betref die aantal aanwendings, die grootte van die dosis, en die duur van die behandeling.

Inligting oor Verpakking: Bottels van 100.

ADRENOXYL

'N NUWE KAPILLÊRE STELPMIDDEL VIR MEDIESE EN CHIRURGIESE TOESTANDE

Adrenoxyl verminder die gemiddelde bloeityd deur die kapillêre deurdringbaarheid te verminder en die saamtrekbaarheid en weerstand te verhoog. Die doeltreffendheid daarvan om bloedverlies te verminder, is deur kliniese studies bewys.

Adrenoxyl het geen simpatomimetiese eienskappe nie. Dit affekteer nie koagulasie, die bloeddruk, of die tempo van die pols nie. Dit is nie-giftig, en daar is geen kontra-indikasies vir die gebruik daarvan nie.

Adrenoxyl word aangedui vir die preventiewe en genesende behandeling van alle soorte haarvatbloeding.

Adrenoxyl is met welslae gebruik vir die vermindering van haarvatbloeding in 'n groot verskeidenheid van chirurgiese operasies, en dit het bewys dat dit veral waardevol is by oor-, neus- en keel-operasies, en by oftalmiese, borskas-, spysverteringskanaal-, plastiese en urogenitale chirurgie. Die beste resultate word verkry as die tablette die aand voor die operasie geneem word, as 1-2 ampulle binnespiers ingespuit word 'n uur voor die operasie, en as die tablette dan weer na die operasie geneem word.

Vir mediese toestande waar kapillêre broosheid 'n kenmerk is, is suksesvolle kliniese resultate behaal deur die gereelde toediening van die tablette.

Adrenoxyl kan per mond toegedien of dit kan onderhuids of binnespiers ingespuit word. Die mondelinge vorm is vir roetinebehandeling, maar wanneer 'n vinnige reaksie verlang word, word die binnespierse roete aanbeveel.

Aanbieding: *Ampulle vir Binnespierse of Onderhuidse Inspuiting*: Iedere ampul van 2 ml. bevat 0.75 mg. adrenochroom-monosemikarbarsoon-dihidraat. Dosies van 6 of 50 ampulle.

Tablette vir Mondelinge Toediening: Iedere tablet bevat 2.5 mg. adrenochroom-monosemikarbasoon-dihidraat. Buisies van 25 tablette en bottels van 500 tablette.

Dosis: Die aanbevole dosisse kan herhaal of vermeerder word indien dit nodig is.

Chirurgiese Toestande: Volwassenes: 2 tot 4 tablette in die aand voor die operasie. 1 tot 2 ampulle van 2 ml. word dan binnespiers ingespuit 'n halfuur tot 'n uur voor die operasie. Twee tablette word drie maal per dag na die operasie geneem as daar 'n gevaar van haarvatbloeding bestaan.

Kinders: 1 tablet die aand voor die operasie. 1 ampul van 2 ml. word dan binnespiers ingespuit 'n halfuur tot 'n uur voor die operasie. 1 tablet word drie maal per dag na die operasie geneem as daar 'n gevaar van haarvatbloeding bestaan.

Mediese Toestande: *Volwassenes.* 1 tot 4 ampulle van 2 ml. word per dag binnespiers ingespuit tydens een of meer inspuitings. So nie word 1 tot 2 tablette drie maal per dag geneem.

Kinders: 1 ampul van 2 ml. word per dag binnespiers ingespuit tydens een of meer inspuitings. So nie, word 1 tablet twee maal per dag geneem.

Verspreiders: Bristolabs (Pty.) Ltd., Verweystraat 10, Troyeville, Johannesburg.

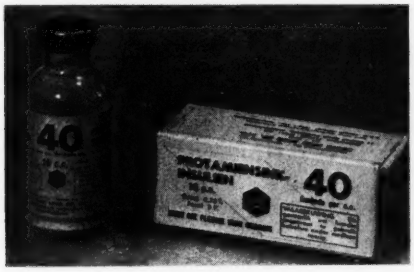
BOOTS SE INSULIENPREPARATE

(GEWOON EN PROTAMIENSINK)

WORD TANS IN SUID-AFRIKA VERVAARDIG

Na die ontdekking van insulien by die Universiteit van Toronto in die somer van die jaar 1922 was Boots Pure Drug Company een van die eerste maatskappye in die wêreld wat met die grootskeepse vervaardiging van insulien begin het. Verlof hiertoe is in 1923 aan hulle toegestaan. Sedertdien het hulle 'n belangrike rol gespeel in die ontwikkeling van nuwe vervaardigingsprosesse. Die gevolg hiervan

was 'n verbetering van kwaliteit, 'n groter opbrengs, en 'n vermindering van prys. Boots sit hierdie beleid van vooruitgang nog steeds voort, en het nou met die vervaardiging van insulienpreparate in Suid-Afrika begin. Dit word gedoen by die moderne fabriek van hul filiaalmaatskappy, Biochemico Ltd.



Boots se insulienpreparate word vervaardig van hoogs gesuiwerde kristalvormige insulien en voldoen aan die veeleisendste spesifikasies vir suiwerheid, stabiliteit en kragtigheid. Iedere groep word biologies in Boots se laboratoriums getoets, en kan met die allergrootste vertroue voorgeskryf en gebruik word.

Boots se insuliene, soos in Suid-Afrika vervaardig, voldoen aan al die wêreldstandaarde en dra daarbenewens die merk van die Suid-Afrikaanse Buro van Standaarde. Gewone en protamiensink-insuliene in flessies van 10 k.s. en teen 'n sterkte van 40 eenhede per k.s. word tans deur Biochemico beskikbaar gestel. Mits hulle die steun van die mediese professie en van lyers aan suikersiekte kry, sal hulle later oorgaan tot die voorbereiding van die volledige reeks in Suid-Afrika.

VINNIGE KWANTITATIEWE TOETSING VAN URINESUIKER

‚TES-TAPE' (LILLY)

'n Klein strokie heldergeel band, deurtrek van ensieme, stel die lyer aan suikersiekte tans in staat om 'n kolorimetriese persentasievasstelling van urinesuiker binne 60 sekondes te doen.

Die nuwe produk, wat as ‚Tes-Tape' (Urine Sugar Test Tape, Lilly) bemark word, is so eenvoudig dat dit vermoedelik binnekort geheel en al die plek sal inneem van die ouderwetse toetsapparaat wat gewoonlik gebruik word en uit 'n lastige reeks reagenttablette, proefbuis, pipet en glaslepel bestaan.

‚Tes-Tape' word beskikbaar gestel in 'n handige plastiektoestel wat min of meer lyk soos die toestelle wat gewoonlik vir sellofaankleefband gebruik word. Iedereen van hierdie toestelletjies bevat genoeg band vir ongeveer 100 toetse. Die band self is gemaak van 'n fyngrein-filterpapier.

Die pasiënt doop een punt van 'n stukkie band, anderhalf duim lank, in 'n monster. As daar glukose in die urine aanwesig is, bring 2 ensieme (glukose-oksidase en peroksidase) veranderings in die kleur van die geel band teweeg. Hierdie veranderings wissel van liggroen tot donkergroen of blou na gelang van die hoeveelheid glukose wat aanwesig is. Die toets is spesifiek, aangesien glukose-oksidase sy katalitiese effek alleen op glukose uitoefen.

'n Kleurkaart op die toestelletjie wat die band bevat, verstrek 'n regstreekse vergelykende aflesing. Op hierdie kaart word daar gebruik gemaak van die volgende kode: 0 (0%), + (1/10%), ++ (1/4%), +++ (1/2%), en ++++ (2% of meer). Hierdie konsentrasies stem oor die algemeen ooreen met die 0, 1+, 2+, 3+ en 4+ wat die lyer aan suikersiekte miskien gewoond is om aan te teken.

Pasiënte word gewaarsku om die strokies band in die lug te laat droogword, en nie op papier nie. So nie, kan die hidrolise van die stysel wat as vulmateriaal in sommige papiersoorte gebruik word, genoeg glukose produseer om 'n vals positiewe lesing te gee.

‚Tes-Tape' is so gerieflik dat selfs 'n besige pasiënt toetse gedurende 'n werksdag kan doen. En dis duidelik hoe gerieflik hierdie band kan wees vir die pasiënt wat op reis gaan. Hospitaaltegnici wat toetse met 'n aantal pasiënte moet doen, sal vind dat ‚Tes-Tape' veel tyd bespaar.

MEGIMIDE EN DAPTAZOLE

Twee nuwe produkte van A. & G. Nicholas Ltd., Megimide (bemegried) en Daptazole (amifenasool) is tans beskikbaar. Megimide is 'n spesifieke barbituraat-antagonis, en is doeltreffend teen al die barbiturate, of hulle nou al mondeling, per rektum, of parenteraal toegedien is.

Megimide word gebruik vir die verligting of die beëindiging van tiopentoon-narkose. Saam met Daptazole word dit ook gebruik by die behandeling van barbituraatvergiftiging.

Daptazole is 'n morfien-antagonis, en stel die geneesheer in staat om morfien toe te dien in dosisse wat uit soveel soos 3 grein per dosis bestaan sonder enige asemhalingsdepressie. Daptazole is ewe doeltreffend as dit gebruik word saam met petidien, Physeptone of Omnopon, of enige ander middel met 'n farmakologiese effek soortgelyk aan dié van morfien. Daptazole versteur nie die pynverdowende effek van morfien of verwante middels nie, en die uitwerking daarvan op die mens kan soos volg saamgevat word:

1. Asemhalingsdepressie wat deur morfien teweeggebring is, word teengewerk.
2. Narkose voortgebring deur morfien word gekontroleer en kan aangepas word deur Daptazole te gebruik of die dosis te verminder.
3. Depressie van die hoesrefleks ten gevolge van morfien word teengewerk.

4. Braking ten gevolge van morfien word verminder.
5. Hardlywigheid ten gevolge van morfien word verminder.
6. Die speldpunt-pupil is slegs een keer waargeneem by meer as 150 pasiënte wat groot dosisse morfien gekry het (tot 3½ grein, 217 mg.).

Sowel Megimide as Daptazole word tans in ander kliniese toestande ondersoek, en daar word verwag dat dit eersdaags moontlik sal wees om ander gebruike van hierdie middels aan te kondig.

Nadere inligting is verkrygbaar van die enigste verspreiders in Suidelike Afrika: Keatings Pharmaceuticals Ltd., Posbus 256, Johannesburg.

PREPARATIONS AND APPLIANCES

CHLOROMYCETIN APLICAPS

AN OPHTHALMIC OINTMENT

P.D. & Co. (Pty.) Limited, the South African subsidiary of Parke, Davis & Company, announce the introduction of Chloromycetin Aplicaps, a unique package form of Chloromycetin Ophthalmic Ointment.

Chloromycetin Aplicaps are small, bottle-shaped, pliable, gelatine capsules with an elongated 'neck' through which Chloromycetin Ophthalmic Ointment, 1%, may be expressed for local application. One of the objections to ophthalmic ointment in tubes is that it is a possible source of re-infection to the eye—especially where the product is used over a period of time or in a clinic where the same tube may possibly be used for more than one patient. Chloromycetin Aplicaps provide a convenient single unit of medication, while the danger of contamination is minimized, since the ointment in the remaining Aplicaps is protected in a sealed capsule.

Indications: (1) Acute and chronic bacterial conjunctivitis caused by the organisms *Escherichia coli, Haemophilus influenzae, Staphylococcus aureus* (*Micrococcus pyogenes*), *Streptococcus haemolyticus*, Morax-Axenfeld, and others.

(2) Epidemic follicular, chronic catarrhal, and inclusion forms of conjunctivitis.

Dosage and Administration: To use the Chloromycetin Aplicap, the tip of the capsule should be wiped with alcohol, the end cut with a clean instrument, and the body of the Aplicap compressed to squeeze out the contents, which should be used at one time and not retained in parts for subsequent use.

Chloromycetin Aplicaps are usually used twice daily, morning and night. However, because of the variety of ophthalmic conditions that will respond to local treatment with Chloromycetin and because of the variations in individual patients, dosage will vary with respect to number of applications, size of dose and duration of treatment.

Package Information: Bottles of 100.

ADRENOXYL

A NEW CAPILLARY HAEMOSTATIC FOR MEDICAL AND SURGICAL CONDITIONS

Adrenoxyl reduces the mean bleeding time by decreasing capillary permeability and increasing contractility and resistance. Its effectiveness in diminishing blood loss has been demonstrated by clinical studies.

Adrenoxyl is devoid of sympathomimetic properties. It does not affect coagulation, blood pressure or pulse rate. It is non-toxic and there are no contra-indications to its use.

Adrenoxyl is indicated in the preventive and curative treatment of all types of capillary bleeding.

Adrenoxyl has been successfully used to diminish capillary bleeding in a wide range of surgical operations, and has proved particularly useful in ear, nose and throat surgery, ophthalmic, thoracic, gastro-intestinal, plastic and urogenital surgery. Optimum results are obtained when tablets are given the evening before operation, 1-2 ampoules intramuscularly one hour before operation, followed by tablets post-operatively.

For medical conditions where capillary fragility is a feature, successful clinical results have been obtained with the regular administration of tablets.

Adrenoxyl may be administered by mouth or by subcutaneous or intramuscular injection. The oral form is for routine treatment, through when rapid action is desired the intramuscular route is recommended.

Presentation: *Ampoules for Intramuscular or Subcutaneous Injection.* Each ampoule of 2 ml. contains 0.75 mg. of Adrenochrome Monosemicarbazone Dihydrate. Boxes of 6 or 50 ampoules.

Tablets for Oral Administration. Each tablet contains 2.5 mg. of Adrenochrome Monosemicarbazone Dihydrate. Tubes of 25 tablets and bottles of 500 tablets.

Dosage: These recommended doses may be repeated or increased should the need arise.

Surgical Conditions: *Adults.* 2 to 4 tablets to be taken the evening before operation. 1 to 2 ampoules of 2 ml. to be injected intramuscularly half to one hour preceding the operation. 2 tablets to be taken three times a day post-operatively when the danger of capillary bleeding is present.

Children: 1 tablet to be taken the evening before operation. 1 ampoule of 2 ml. to be injected intramuscularly half to one hour preceding the operation. 1 tablet to be taken three times a day post-operatively when the danger of capillary bleeding is present.

Medical Conditions: *Adults.* 1 to 4 ampoules of 2 ml. should be injected intramuscularly per day in one or more injections—or alternatively 1 to 3 tablets to be taken three times a day.

Children. 1 ampoule of 2 ml. should be injected intramuscularly per day—or alternatively 1 tablet to be taken twice a day.

Distributors: Bristolabs (Pty.) Ltd., 10 Verwey St., Troyeville, Johannesburg.

BOOTS INSULIN PREPARATIONS

(PLAIN AND PROTAMINE ZINC)

NOW MADE IN SOUTH AFRICA

Following the discovery of insulin at the University of Toronto in the summer of 1922, Boots Pure Drug Company was one of the first companies in the world to commence large-scale manufacture of insulin, when permission was granted to them in

1923. Since then they have played an important part in evolving new processes for its manufacture, with consequent improvement in the quality, better yields, and reductions in price. Carrying through the policy of progress, Boots are now manufacturing insulin preparations in South Africa at the modern laboratory of their Associate Company, Biochemico Ltd.

Boots Insulin preparations are manufactured from highly-purified crystalline insulin and conform to the highest specifications for purity, stability and potency. Every batch is biologically tested in Boots laboratories and can be prescribed and used with the utmost confidence.

Boots Insulins made in South Africa comply with all world standards and in addition carry the mark of the South African Bureau of Standards. At present Biochemico Ltd. issue plain and protamine zinc insulins in vials of 10 c.c., strength 40 units per c.c. Given the support of the medical profession and of diabetics, they will prepare the complete range in South Africa.

RAPID QUANTITATIVE URINE SUGAR TESTING

'TES-TAPE' (LILLY)

A small strip of bright yellow tape, impregnated with enzymes, now enables a diabetic patient to make a colorimetric percentage determination of urine sugar in 60 seconds.

Marketed as 'Tes-Tape' (Urine Sugar Test Tape, Lilly), the new product is so simple that it is

expected to replace in ordinary use the old-style testing kit with its cumbersome array of reagent tablets, test tube, pipette and glass spoon.

'Tes-Tape' is provided in a handy plastic dispenser that resembles those for cellophane adhesive tapes. Each dispenser holds enough tape for approximately 100 tests. The tape is made of a fine-grain filter paper.

The patient dips one end of a 1½-inch strip of tape into a specimen. If glucose is present in the urine, 2 enzymes (glucose oxidase and peroxidase) act to produce changes in the colour of the yellow tape. These changes range from light green to deep green or blue, depending on the amount of glucose present. The test is specific, since glucose oxidase exerts its catalytic action only on glucose.

A colour chart on the dispenser gives a direct comparison reading. The chart is coded: 0 (0%), + (1/10%), ++ (1/4%), +++ (1/2%), and ++++ (2% or more). These concentrations in general coincide with the 0, 1+, 2+, 3+ and 4+ the diabetic patients may be used to recording.

Patients are cautioned to dry the strips of tape in the air and not on paper. Otherwise, hydrolysis of the starch used as a filler in some papers produces enough glucose to give a false positive reading.

The convenience of 'Tes-Tape' allows even a busy patient to run tests during the working day. For travel, the advantages are obvious. Hospital technicians who must run tests on a number of patients will find 'Tes-Tape' a time-saver.

Distributors: Johnson & Johnson (Pty.) Ltd., P.O. Box 727, East London.

MEGIMIDE AND DAPTAZOLE

Two new products of A. & G. Nicholas Ltd., Megimide (bemegride) and Daptazole (amiphenazole) are available.

Megimide is a specific barbiturate antagonist and is effective against all barbiturates, whether these have been administered orally, rectally or parenterally.

Megimide is used to lighten or terminate thiopentone anaesthesia and is also used in conjunction with Daptazole in the treatment of barbiturate poisoning.

Daptazole is a morphine antagonist which enables morphine to be administered in doses as high as 3 grains per dose without respiratory depression. Daptazole is equally effective when used with pethidine, Physeptone or Omnopon, or any other drug with a pharmacological action similar to that of morphine.

Daptazole does not interfere with the analgesic action of morphine or allied drugs. Its action in man may be summarized as follows:

1. Morphine-induced respiratory depression is counteracted.
2. Narcosis due to morphine is controlled and may be adjusted by using or lowering the dosage of Daptazole.
3. Depression of the cough reflex due to morphine is counteracted.
4. Vomiting due to morphine is lessened.
5. Constipation due to morphine is lessened.
6. The pin-point pupil was seen only once in more than 150 patients on large doses of morphine (up to 3¼ grains, 217 mg.).

Both Megimide and Daptazole are being investigated in other clinical conditions and publication of other uses is expected shortly.

Further information is available from the sole distributors in Southern Africa: Keatings Pharmaceuticals Ltd., P.O. Box 256, Johannesburg.

NOTES AND NEWS · BERIGTE

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4. Braking ten gevolge van morfien word verminder.
5. Hardlywigheid ten gevolge van morfien word verminder.
6. Die speldpunt-pupil is slegs een keer waargeneem by meer as 150 pasiënte wat groot dosisse morfien gekry het (tot 3½ grein, 217 mg.).

Sowel Megimide as Daptazole word tans in ander kliniese toestande ondersoek, en daar word verwag dat dit eersdaags moontlik sal wees om ander gebruike van hierdie middels aan te kondig.

Nadere inligting is verkrygbaar van die enigste verspreiders in Suidelike Afrika: Keatings Pharmaceuticals Ltd., Posbus 256, Johannesburg.

PREPARATIONS AND APPLIANCES

CHLOROMYCETIN APLICAPS

AN OPHTHALMIC OINTMENT

P.D. & Co. (Pty.) Limited, the South African subsidiary of Parke, Davis & Company, announce the introduction of Chloromycetin Aplicaps, a unique package form of Chloromycetin Ophthalmic Ointment.

Chloromycetin Aplicaps are small, bottle-shaped, pliable, gelatine capsules with an elongated 'neck' through which Chloromycetin Ophthalmic Ointment, 1%, may be expressed for local application. One of the objections to ophthalmic ointment in tubes is that it is a possible source of re-infection to the eye—especially where the product is used over a period of time or in a clinic where the same tube may possibly be used for more than one patient. Chloromycetin Aplicaps provide a convenient single unit of medication, while the danger of contamination is minimized, since the ointment in the remaining Aplicaps is protected in a sealed capsule.

Indications: (1) Acute and chronic bacterial conjunctivitis caused by the organisms *Escherichia coli, Haemophilus influenzae, Staphylococcus aureus* (*Micrococcus pyogenes*), *Streptococcus haemolyticus*, Morax-Axenfeld, and others.

(2) Epidemic follicular, chronic catarrhal, and inclusion forms of conjunctivitis.

Dosage and Administration: To use the Chloromycetin Aplicap, the tip of the capsule should be wiped with alcohol, the end cut with a clean instrument, and the body of the Aplicap compressed to squeeze out the contents, which should be used at one time and not retained in parts for subsequent use.

Chloromycetin Aplicaps are usually used twice daily, morning and night. However, because of the variety of ophthalmic conditions that will respond to local treatment with Chloromycetin and because of the variations in individual patients, dosage will vary with respect to number of applications, size of dose and duration of treatment.

Package Information: Bottles of 100.

ADRENOXYL

A NEW CAPILLARY HAEMOSTATIC FOR MEDICAL AND SURGICAL CONDITIONS

Adrenoxyl reduces the mean bleeding time by decreasing capillary permeability and increasing contractility and resistance. Its effectiveness in diminishing blood loss has been demonstrated by clinical studies.

Adrenoxyl is devoid of sympathomimetic properties. It does not affect coagulation, blood pressure or pulse rate. It is non-toxic and there are no contra-indications to its use.

Adrenoxyl is indicated in the preventive and curative treatment of all types of capillary bleeding.

Adrenoxyl has been successfully used to diminish capillary bleeding in a wide range of surgical operations, and has proved particularly useful in ear, nose and throat surgery, ophthalmic, thoracic, gastro-intestinal, plastic and urogenital surgery. Optimum results are obtained when tablets are given the evening before operation, 1-2 ampoules intramuscularly one hour before operation, followed by tablets post-operatively.

For medical conditions where capillary fragility is a feature, successful clinical results have been obtained with the regular administration of tablets.

Adrenoxyl may be administered by mouth or by subcutaneous or intramuscular injection. The oral form is for routine treatment, through when rapid action is desired the intramuscular route is recommended.

Presentation: *Ampoules for Intramuscular or Subcutaneous Injection.* Each ampoule of 2 ml. contains 0.75 mg. of Adrenochrome Monosemicarbazone Dihydrate. Boxes of 6 or 50 ampoules.

Tablets for Oral Administration. Each tablet contains 2.5 mg. of Adrenochrome Monosemicarbazone Dihydrate. Tubes of 25 tablets and bottles of 500 tablets.

Dosage: These recommended doses may be repeated or increased should the need arise.

Surgical Conditions: *Adults.* 2 to 4 tablets to be taken the evening before operation. 1 to 2 ampoules of 2 ml. to be injected intramuscularly half to one hour preceding the operation. 2 tablets to be taken three times a day post-operatively when the danger of capillary bleeding is present.

Children: 1 tablet to be taken the evening before operation. 1 ampoule of 2 ml. to be injected intramuscularly half to one hour preceding the operation. 1 tablet to be taken three times a day post-operatively when the danger of capillary bleeding is present.

Medical Conditions: *Adults.* 1 to 4 ampoules of 2 ml. should be injected intramuscularly per day in one or more injections—or alternatively 1 to 3 tablets to be taken three times a day.

Children. 1 ampoule of 2 ml. should be injected intramuscularly per day—or alternatively 1 tablet to be taken twice a day.

Distributors: Bristolabs (Pty.) Ltd., 10 Verwey St., Troyeville, Johannesburg.

BOOTS INSULIN PREPARATIONS

(PLAIN AND PROTAMINE ZINC)

NOW MADE IN SOUTH AFRICA

Following the discovery of insulin at the University of Toronto in the summer of 1922, Boots Pure Drug Company was one of the first companies in the world to commence large-scale manufacture of insulin, when permission was granted to them in

1923. Since then they have played an important part in evolving new processes for its manufacture, with consequent improvement in the quality, better yields, and reductions in price. Carrying through the policy of progress, Boots are now manufacturing insulin preparations in South Africa at the modern laboratory of their Associate Company, Biochemico Ltd.

Boots Insulin preparations are manufactured from highly-purified crystalline insulin and conform to the highest specifications for purity, stability and potency. Every batch is biologically tested in Boots laboratories and can be prescribed and used with the utmost confidence.

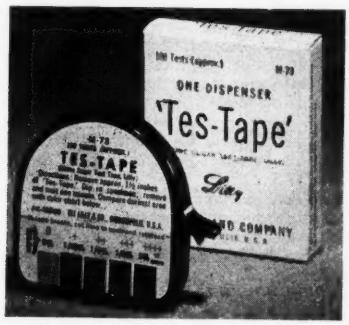
Boots Insulins made in South Africa comply with all world standards and in addition carry the mark of the South African Bureau of Standards. At present Biochemico Ltd. issue plain and protamine zinc insulins in vials of 10 c.c., strength 40 units per c.c. Given the support of the medical profession and of diabetics, they will prepare the complete range in South Africa.

RAPID QUANTITATIVE URINE SUGAR TESTING

'TES-TAPE' (LILLY)

A small strip of bright yellow tape, impregnated with enzymes, now enables a diabetic patient to make a colorimetric percentage determination of urine sugar in 60 seconds.

Marketed as 'Tes-Tape' (Urine Sugar Test Tape, Lilly), the new product is so simple that it is



expected to replace in ordinary use the old-style testing kit with its cumbersome array of reagent tablets, test tube, pipette and glass spoon.

'Tes-Tape' is provided in a handy plastic dispenser that resembles those for cellophane adhesive tapes. Each dispenser holds enough tape for approximately 100 tests. The tape is made of a fine-grain filter paper.

The patient dips one end of a 1½-inch strip of tape into a specimen. If glucose is present in the urine, 2 enzymes (glucose oxidase and peroxidase) act to produce changes in the colour of the yellow tape. These changes range from light green to deep green or blue, depending on the amount of glucose present. The test is specific, since glucose oxidase exerts its catalytic action only on glucose.

A colour chart on the dispenser gives a direct comparison reading. The chart is coded: 0 (0%), + (1/10%), ++ (1/4%), +++ (1/2%), and ++++ (2% or more). These concentrations in general coincide with the 0, 1+, 2+, 3+ and 4+ the diabetic patients may be used to recording.

Patients are cautioned to dry the strips of tape in the air and not on paper. Otherwise, hydrolysis of the starch used as a filler in some papers produces enough glucose to give a false positive reading.

The convenience of 'Tes-Tape' allows even a busy patient to run tests during the working day. For travel, the advantages are obvious. Hospital technicians who must run tests on a number of patients will find 'Tes-Tape' a time-saver.

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MEGIMIDE AND DAPTAZOLE

Two new products of A. & G. Nicholas Ltd., Megimide (bemegride) and Daptazole (amiphenazole) are available.

Megimide is a specific barbiturate antagonist and is effective against all barbiturates, whether these have been administered orally, rectally or parenterally.

Megimide is used to lighten or terminate thiopentone anaesthesia and is also used in conjunction with Daptazole in the treatment of barbiturate poisoning.

Daptazole is a morphine antagonist which enables morphine to be administered in doses as high as 3 grains per dose without respiratory depression. Daptazole is equally effective when used with pethidine, Physeptone or Omnopon, or any other drug with a pharmacological action similar to that of morphine.

Daptazole does not interfere with the analgesic action of morphine or allied drugs. Its action in man may be summarized as follows:

1. Morphine-induced respiratory depression is counteracted.
2. Narcosis due to morphine is controlled and may be adjusted by using or lowering the dosage of Daptazole.
3. Depression of the cough reflex due to morphine is counteracted.
4. Vomiting due to morphine is lessened.
5. Constipation due to morphine is lessened.
6. The pin-point pupil was seen only once in more than 150 patients on large doses of morphine (up to 3¼ grains, 217 mg.).

Both Megimide and Daptazole are being investigated in other clinical conditions and publication of other uses is expected shortly.

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The chapter on the *Psychiatric Aspects of Head Injury* includes a useful differentiation of the post-traumatic neuroses from post-concussional syndromes

and emphasizes that the patient who has been concussed should be encouraged 'to move his head, to sit up and to occupy himself' as soon as he is capable of understanding advice (p. 161). This nursing technique prevents the patient from developing an exaggerated notion of his condition and is important in hastening his recovery.

The authors recognize the borderland territory in which cases occur that are not obviously or wholly psychological in origin. They include bed-wetting in this group and disagree with the glibly held view that it is a psychogenic condition. 'We do not believe there are good grounds for such a wholesale assumption. Some cases seem certainly to be psychogenic, but many do not, and it seems probable that there are various types of enuresis with differing aetiological factors' (p. 326). They stress the fact that restriction of fluid intake is a useless and unnecessary precaution, as it neither prevents bed-wetting nor reduces its frequency or amount. Regular waking of the child at night to ensure emptying of the bladder is also usually without effect. The use of amphetamine to reduce the depth of sleep makes the patient more readily aware of the need to urinate. In this way a conditioned reflex is gradually built up, as in the case of the 'electric bed'. The present reviewer has found that the offer of some simple reward (e.g. a sweet) is a most effective way of establishing nocturnal control.

The average practitioner will be particularly interested in the chapter dealing with *The Treatment of Mental Illness*, in which physical, chemical and psychological methods are reviewed. A special section is devoted to pre-frontal leucotomy, which is regarded as a symptomatic treatment, and which must therefore be used on a symptomatic basis. 'The main indications are, therefore, afforded by intractable cases incapacitated by emotional excesses in the form of tension, agitation and distress' (p. 382). The absolute and relative contra-indications to this irreversible procedure are also reviewed.

The final chapter deals with *The Legal Aspects of Mental Illness*. The statutory requirements are, of course, limited in their application to the United Kingdom, but there are some valuable general principles, particularly in the preparation of medico-legal reports, which are of general validity. The medical practitioner who becomes involved as an expert in the witness-box would do well to study carefully the sound advice the authors give in this respect: 'In making reports or recommendations they (doctors) are sometimes liable to assume something of the role of advocate instead of that of impartial observer, owing to a certain sense of obligation to the patient. But it should not be supposed that a man is better treated by medical than legal measures merely because he has sought medical advice. Conversely, even though punishment may sometimes be valuable, it should never be prescribed by a doctor' (p. 398).

The authors have succeeded admirably in their objective to write an introduction to psychiatry intended for students and practitioners. The modest price at which the book is available makes this an important additional reason for acquiring it.

BODY FLUIDS IN SURGERY

Body Fluids in Surgery. By A. W. Wilkinson, Ch.M., F.R.C.S.E. (Pp. 203+Index. 16s.) 1955. Edinburgh and London: E. & S. Livingstone Ltd.

In the past 6 years there has been a positive invasion in the surgical literature of the importance of fluids and electrolytes. Of the many books written, Wilkinson's *Body Fluids in Surgery* fulfils a definite need, as it does succeed in presenting to the surgeon a more balanced picture of the biochemical and physiological processes that occur in the child, the average adult and the obese adult. There is no question that the understanding of these fundamental concepts will prevent many post-operative complications.

It is well known, in general, that unduly fat people are not good subjects for surgical procedures. This is not only because of their poor mechanical efficiency, but also because their body water is normally much lower than in the average person (40% compared to 60%). The danger of over-hydrating fat people is therefore greater and the incidence of pulmonary complications is also increased. Post-operatively, in the average patient, no more than 1,600 to 2,500 ml. of water should be supplied, otherwise we may cause either water intoxication or profound body oedema due to excessive saline and water. Like most British workers, Mr. Wilkinson is also too timid in his approach to intravenous potassium therapy. He warns against its routine administration post-operatively. The reviewer, after 6 years' experience, has routinely employed from 4-6 g. of potassium chloride in 10% dextrose and 5% alcohol intravenously over a 24-hour period in the average uncomplicated case and he has never had cause to regret its administration. Many American and Continental hospitals also employ this regime, so we can safely advocate it. The infusion of protein hydrolysates during the first 3 or 4 days of the catabolic phase is of no use, because the normal response to trauma necessitates inevitable nitrogen loss.

In the Chapter on *Shock* the point is made that Dextran is more effective than plasma in burns, possibly because a smaller proportion of the administered colloid is lost into the exudate. In extensive burns 30% of the circulating red cells may be destroyed by heat, hence the value of whole blood transfusions in addition to Dextran in saline. The discussion on general treatment is useful. It also confirms the value of intravenous alcohol and fructose or invert sugar in providing ample calories and sparing body proteins. Unfortunately the author does not devote enough space to an elucidation of the newer terminology of milli-equivalents, but despite this small lapse the book is authoritative, most interesting and very readable.

A CHILD'S EYES

Rehabilitation of a Child's Eyes. By Richard G. Scobee, B.A., M.D., F.A.C.S. and Herbert M. Katzin, M.D., F.A.C.S. (Pp. 128. With 25 Figs. 25s.) 1955. 2nd ed. The C.V. Mosby Company.

Exegesis in a case of squint is often time-consuming and laborious. The parents of a squinting child want to know why their child needs an operation when Mrs. van der Merwe's child was cured by glasses. Why can't their infant have exercises like the Cohen's baby: 'We can afford it, Doctor!'

In a previous book Scobee translated the obscurities of Worth and Chavasse's English prose into Basic American. This made matters so simple that even the present reviewer was able to understand them. This book on the rehabilitation of a child's eyes performs a similar service for parents. The writing is authoritative, orthodox and logical.

The book and the purpose for which it is designed are both very well worth while and the reviewer can give no better recommendation than to say that since receiving his copy he has already prescribed it for several parents.

JAMES PARKINSON

James Parkinson (1755-1824). Edited by Macdonald Critchley. (1955. Pp. 268. With 11 Figs. 15s.). London: Macmillan & Co. Ltd.

James Parkinson was born in 1755 and it is a fitting tribute to this remarkable man that a book such as this should be published in the bicentenary year of his birth. This volume is not, as the title suggests, a mere biography of Parkinson. It incorporates authoritative papers on the clinical and pathological features of the disease which now bears his name. The book is edited by Dr. Macdonald Critchley who writes the introductory chapter in his usual cryptic and epigrammatic style: 'Medical teaching is the richer and livelier for the judicious injection of the names of some of our pioneering forebears; but the diet must not be too rich, however. Parkinson's disease is an apt and indeed unassailable synonym for paralysis agitans.'

Following the introductory chapter there is a detailed biographical essay by Dr. W. A. McMenemey. We learn of Parkinson as a man with a highly developed social conscience and sense of social responsibility. He was, indeed, the first of the medical politicians, a pursuit which at one time brought him to a close and dangerous skirmish with the law. Interesting pen pictures are afforded of such august bodies and chambers as the Privy Council and the Old Bailey, where Parkinson gave evidence; descriptions which also serve to illustrate the personal integrity of his character. As a medical practitioner he was a keen observer, extremely critical, and a prolific writer. It is interesting to note that a paper by Parkinson and his son contain the first recorded instance of appendicitis in British medical literature. Another chapter contains the original text of his monograph on the *Shaking Palsy*. How simple and effective is the opening paragraph enunciating the clinical argument: 'Involuntary tremulous motion with lessened muscular power, in parts not in action and even when supported; with a propensity to bend the trunk forwards, and to pass from a walking to a running pace: the senses and intellects being uninjured.'

This volume also contains an up-to-date account by Dr. J. Godwin Greenfeld of the changing views regarding the morbid anatomy of Parkinson's disease and a paper by Sir Francis Walshe on the clinical features with special reference to fundamental physiological principles. Thus the clinical and the pathological aspects are presented against a historical background, an ideal and exemplary exposition.

The book can be recommended without hesitation.

A POCKET PRESCRIBER

The Pocket Prescriber and Guide to Prescription Writing. By Alistair G. Cruikshank, F.R.C.P.E. (Pp. 287 + Index. 5s.). 1956. 16th ed. Edinburgh and London: E. & S. Livingstone Limited.

This pocket guide to prescription writing first appeared in 1882, and its regular reappearance since then in 16 new editions is silent but eloquent testimony to the practical usefulness of this handy pocket prescriber.

Prescriptions are listed under the headings of fairly wide categories of diseases (which should make reference easy) and there is, in addition, a valuable alphabetically arranged list of modern remedies, which includes proprietary preparations. All the important antibiotics are listed and described concisely. A list of doses, in Metric and Imperial weights, of B.P. chemicals, drugs and preparations is included.

This handy monograph (which measures approximately 4" x 3") concludes with a comprehensive Table listing proprietary or trade names of preparations together with the near or equivalent drug or preparation, as well as an index to the prescriptions printed in the book.

CORRESPONDENCE

PARAFFIN POISONING: A REPORT ON 60 CASES

To the Editor: Accidental ingestion of paraffin leading to poisoning has (in my series, which extends over the period 1946-1956) occurred in children aged 10 months to 2¼ years; 75% of the cases were non-European. The amount of paraffin ingested varied from a tongue touch to about 3 oz.

Symptoms. 1. *Gastric*: Vomiting occurred spontaneously in 20% of cases.

2. *Central Nervous System*: There was mild drowsiness to deep stupor, the variation depending on the amount ingested.

3. *Respiratory*: (a) *Cough.* This was of a distressing, dry character and pathetic to watch in those that were semi-stuporose.

(b) *Dyspnoea and cyanosis.* The latter was an indication of a larger amount of poison ingested.

(c) *Scattered rales* and *rhonchi* were occasionally noted.

Treatment: *Lavage.* The parent or nurse (whichever appeared the stronger) would hold the child on the lap in a sitting position with the trunk slightly flexed. A size 10 Jacques (adult male) rubber catheter (lubricated with olive oil) was slowly passed into the stomach. A second assistant would hold the protruding end against the child's mouth to avoid the tube being thrown out with the spasm of vomiting. Two to three syringefuls (Higginson's ear type) of dilute sodium bicarbonate solution were introduced before drainage was allowed to occur.

When the gastric return was clear of paraffin

odour, 2 further lavages into 2 separate, clean receptacles were performed. Completeness of the procedure was confirmed by a fully alert child and absence of coughing. The parent was asked to offer only milk feeds for the rest of the day. No other medication was prescribed.

Follow-up was complete in 25% of the cases for several years; none showed residual respiratory illness. One assumes the other 75% remained well on account of their failure to re-attend.

An unusual case of a middle-aged adult male (who ingested half a bottle, i.e. 13 oz.) of paraffin may be quoted. Having been a beer drinker, he only registered the taste after the third gulp. His African servant had mistakenly placed the paraffin bottle, instead of the water bottle, in the refrigerator, and the patient had been doing some heavy gardening.

He, too, received only gastric lavage and has remained free from respiratory illness since the accident in August 1952.

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EXPERT OR SPECIALIST?*

To the Editor: Your readers will be interested in the following extract which appeared in the *New England Journal of Medicine* on 23 February 1956 at p. 392, under the above heading:

'The dictionary, and until recently common usage, has defined a "specialist" as one who restricts his activities to certain areas of medical practice or to certain diseases. Thus, a man may be a specialist in pathology or bacteriology whether or not he is a physician; a woman may be a specialist in the removal of superfluous hair by electricity without any formal training or degree; or a chiropodist may specialize in treating corns.

Quite different is the significance of the term "expert". As used in the courts, an expert witness is one who has special training or knowledge in a given field, and it is customary to request that an expert witness qualify himself in court by describing his training, qualifications and accomplishments to the satisfaction of judge and jury.

Since the establishment of the various American specialty boards, the listing of their certificate holders, and the publication of a *Directory of American Specialists*, confusion has arisen. The *Directory* contains a large (but by no means comprehensive) list of qualified specialists, many of whom no doubt are also experts. The layman may be excused if he consults such a source to determine whether or not a given physician is a "qualified specialist". Physicians know, however, that such a listing is no guaranty of specialization in actual practice and, more important, that the absence of a physician's or surgeon's name from the list does not prove him to be a general practitioner.

One practically important result is that governmental agencies authorized to pay higher fees to specialists than to general practitioners may hesitate to accept the services of a specialist at standard rates if his name does not appear in the *Directory*. Everyone is acquainted with outstanding "specialists" of great skill who are not certified by the board concerned. They may or may not be specialists in the dictionary sense, but they are unquestionably experts who for one reason or another have never qualified themselves for certification.

No directory of experts exists. The *Directory of American Specialists* is perhaps a partial or incomplete list of experts, but even here there may be some difference of opinion about whether mere formal compliance with certain standards of training and practice makes a man a true expert.

The boards might consider abandoning the use of the word "specialist" and adopting some other term. They should perhaps be known as American qualification boards and their directory as the *Directory of Qualified Experts*.

A man who specializes in rectal diseases may be a qualified expert in rectal surgery, or he may be an ignorant quack. A better term than "specialist" is needed to identify the expert.'

I commend this commonsensical statement of our similar problem in South Africa to the attention of the South African Medical Council.

An Expert (not Specialist) Practitioner.

Johannesburg.

* [See the *Editorial* in this Journal, Vol. 2, No. 5 (May 1956) at p. 239.—*Editor*.]

IN MEMORIAM: RENÉ LE RICHE

To the Editor: I remember Professor Le Riche as a short squat figure holding an audience spellbound by his easy eloquence—speaking for two hours without notes, hesitating neither for a phrase nor an idea.

Professor of Surgery at the College of France, he was great both as a clinical and a research surgeon. At the bedside, he felt it was the surgeon's duty to take all responsibilities on his own shoulders. If an operation was indicated, he advised it without burdening the patient with a list of possible complications and a detailed table of mortality figures. He felt that the surgeon's part was to give confidence to the patient, not to sow the seeds of fear in him by a discussion of ominous technical details.

Pathology and pathological physiology were his great loves. He believed that in experimental surgery and pathology the proper study of mankind was man. He thought that many fallacies had crept into our current pathology through the application of observations on the smaller animals which had not been corroborated in Man.

Le Riche once compared surgeons with taxi-drivers—the best are not always those who drive fastest. He was noted for the precision and the neatness of his surgical dissections, the gentleness with which he handled the tissues, his attention to haemostasis and his meticulous care in reconstruction. It was said of him that in his operative work he always knew where he was and where he was going.

S. ETZINE

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A PRACTICAL UP-TO-DATE TABLE OF ANTIDOTES

First Aid: DO THIS FIRST

- Send for a doctor immediately
- Keep the patient warm.
- Determine if patient has taken (1) A POISON: something not meant to be taken internally . . . or (2) AN OVERDOSE: a food or drug taken in excessive quantity.
- While waiting for physician, give appropriate counterdose.
- But do not force any liquids on the patient—if he is unconscious.

To find the correct COUNTERDOSE

- In one of the lists printed at left, find substance causing the trouble.
- Next to that substance is a number. This refers to counterdose bearing same number in the section below.
- Keep all poisons and medicines out of reach of children.

POISONS

Acids **18**
Antifreeze **9**
Bichloride of mercury **12**
Camphor **1**
Carbon monoxide **16**
Chlorine bleach **8**
Cleaning fluids **17**
Disinfectant
with chlorine **8**
with carbolic acid **6**
Food poisoning **11**
Gasoline, kerosene **17**
Insect & rat poisons
with arsenic **2**
with sodium fluoride **14**
with phosphorus **5**
with DDT **11**
with strychnine **15**
Iodine tincture **4**
Lye **10**
Mushrooms **11**
Oil of wintergreen **9**
Paint (lead) **11**
Powder from broken fluorescent tubes **1**
Rubbing alcohol **9**
Turpentine **17**
Washing soda **10**

OVERDOSES

Alcohol **9**
Barbiturates **3**
Belladonna **15**
Bromides **11**
Codeine **13**
Headache & cold compounds **9**
Morphine, opium **13**
Paregoric **13**
'Pep' medicines **2**
Salicylates (aspirin) **9**
Sleeping medicines **3**

Induce vomiting with an emetic such as • Tablespoon of mustard, or • Soap & warm water, or • Salt & warm water, or • Finger in throat. **1**	• Give a mixture of 2 tablespoons of powdered burnt toast, 1 spoon milk of magnesia, 4 spoons strong tea. • Induce vomiting. (See #1) **2**
• Give mixture as in #2 • Induce vomiting. (See #1) • Give 2 tablespoons epsom salt in 2 glasses of water. • Then give large quantities of hot coffee or strong tea. **3**	• Give 2 oz. thick starch paste—made by mixing cornstarch & water. • Then give 2 oz. salt in quart of warm water. Drink until vomit fluid is clear. • Finally, give glass of milk. **4**
• 4 oz. hydrogen peroxide. • 1 tablespoon sodium bicarb in quart of warm water. • Then give 4 oz. mineral oil. Positively do NOT take vegetable or animal oil. • Induce vomiting. (See #1). **5**	• Give 2 tablespoons whiskey in 8 spoons warm water. • Next give glass of milk or white of 2 eggs. • Then give hot tea or strong coffee. **6**
• Give mixture as in #2. • Induce vomiting. (See #1) • Tablespoon sodium bicarb in quart of warm water. • Give 2 tablespoons epsom salt in pint of water. **7**	• Give 1 teaspoon of aromatic spirits of ammonia in glass of water. • Hot coffee or strong tea plus egg white. **8**
• Give mixture as in #2. • Induce vomiting. (See #1) • Give tablespoon of sodium bicarb in quart of warm water. • Give strong tea or coffee. **9**	• Give 2 tablespoons of vinegar in 2 glasses of water. • Then give white of 2 eggs or 2 oz. of olive oil. • Do NOT induce vomiting! **10**
• Induce vomiting. (See #1) • Give 2 tablespoons epsom salt in 2 glasses of water. • Then give large quantities of hot coffee or strong tea. **11**	• For each tablet swallowed give white of 2 eggs in glass of milk. • Give mixture as in #2. • 1 oz. epsom salt in pint of water **12**
• Give mixture as in #2. • 2 tablespoons epsom salt in 2 glasses of water. • Keep patient awake. **13**	• Give 2 tablespoons of milk of magnesia. • Give glass of milk. • Induce vomiting. (See #1) **14**
• Give mixture as in #2. • Induce vomiting. (See #1) • Give artificial respiration if necessary. **15**	• Rush victim into fresh air. • Make patient lie down. • Hot coffee or strong tea. **16**
• Induce vomiting. (See #1) • Give 4 oz. mineral oil. • Hot coffee or strong tea. **17**	• Give 1 oz. milk of magnesia in large quantity of water. • Do NOT induce vomiting! **18**